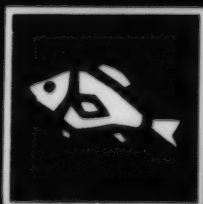
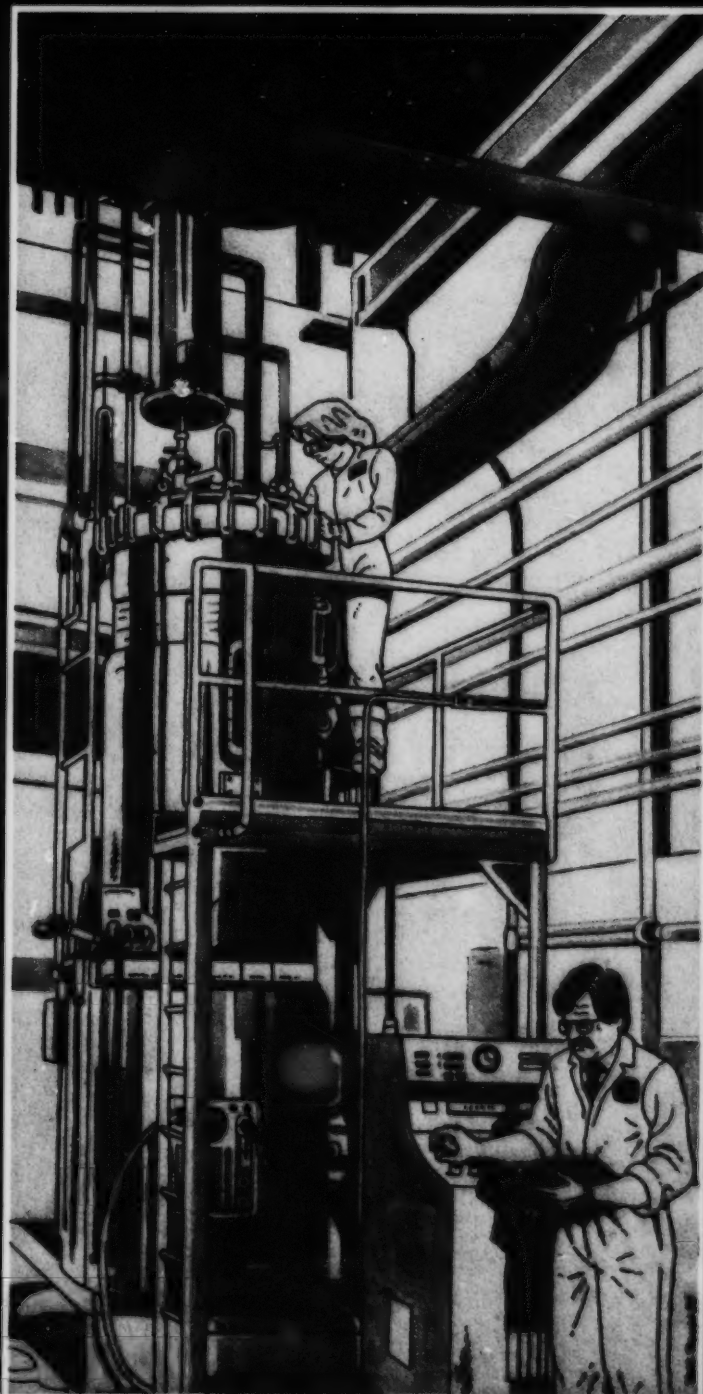


1988 Canadian Biotechnology Industry Sourcebook



Canada



**1988 Canadian Biotechnology
Industry Sourcebook**

Prepared for the National Biotechnology Advisory Committee and the
Interdepartmental Committee on Biotechnology by:

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July 1988

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Although we feel that we have made a thorough search across Canada for companies actively involved in biotechnology, there remains the possibility that we may have missed some companies; any such omission is unintentional. In addition, we have made every attempt to see that the information provided for the Sourcebook was entered faithfully and should there be errors or omissions, we apologize, and request that corrections be forwarded to us.

All corrections or suggestions for future editions of the Sourcebook should be addressed to:

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1988 Canadian Biotechnology Industry Sourcebook

Introduction

There is no doubt that the Canadian biotechnology industry is growing rapidly. The first sourcebook compiled by this Ministry and released in November 1986, listed 110 commercial organizations involved in biotechnology research, development or manufacturing. This edition lists 218. Of those listed in the first edition, 16 did not wish to be listed in the current sourcebook, for one reason or another, while 4 others have had a name change. In compiling the information, at least 100 additional organizations were contacted; however, their current R&D or manufacturing activities were determined not to fit within the scope of the sourcebook. To be listed in this edition, an organization had to be a commercial enterprise actively involved in researching or using biotechnology, i.e. the use of microbial, plant or animal cells for the production of goods and services.

In addition, the R&D emphasis of the firms listed involves the relatively new techniques of genetic engineering, monoclonal antibodies, plant and tissue culture and novel fermentation processes. Some difficulty was experienced in determining the extent of involvement by some companies in the new techniques as opposed to conventional methods. As a result, the companies were asked to address the question of whether or not their activities could be classified as biotechnology and a review panel made the final selection to ensure consistency.

A few companies indicated that their biotechnology activities had applications to all sectors of the economy, while many others listed several sectors of application. Index II provides a listing of all sectors specified by the companies; however, for the purpose of the analysis and statistics, only the principal focus of activity for each company was used.

ANALYSIS

The definition of biotechnology, for the purposes of this Sourcebook is, the utilization of biological processes involving microbial, plant or animal cells or their constituents to provide goods and services. Stress is placed on the new techniques of genetic engineering, enzymes and enzyme systems, monoclonal antibodies, plant cell culture and fermentation development as opposed to conventional procedures. The geographical distribution of commercial organizations active in biotechnology is shown in Figure I; values for 1986 are shown in parentheses.

In this update, applications of R&D are given by economic sector, rather than by discrete field of application as in the 1986 Sourcebook; therefore, some figures are not directly comparable, this applies especially to the fermentation area. In addition, information on biotechnology researchers and expenditures which was previously unavailable is presented. In this edition, applications of R&D activities are divided into 9 sectors: agriculture; aquaculture; chemicals and alternative energy; mineral resources; food and beverages; forestry and forest products; health care (animal, fish and human); waste treatment and other. For the purposes of analysis, Tables I and II, the principal sector of application was used; however, Table III contains a list of all possible sectors of applications identified by the respondents.

The majority of companies indicated that applications of their biotechnology activities are pertinent to multiple sectors. However, in the health care sector 49% of the reporting companies claim applications of their research which are unique to this sector; in agriculture the similar figure is 27%; for all others less than 20% of the companies involved have applications which are unique to one sector. This underlies the enabling and cross-sectoral characteristic of the specific technologies.

Figure II indicates that, in Canada, companies actively involved in biotechnology are concentrated in the health care sector followed by agriculture and, most interestingly, waste treatment. Figures III and IV give further evidence of the eminence of the health care sector in terms of expenditures and researchers. On the basis of confidential as well as published information provided by 173 of the companies, there are 1478 persons involved in biotechnology and 174 companies reported R&D expenditures to be approximately \$164 million. By extrapolation, for the total population surveyed in this report, there are estimated to be almost 1850 persons involved in biotechnology in Canada and annual expenditures for R&D are approximately \$200 million or double the figure of 2 years ago.

Figure III summarizes the distribution of R&D expenditures by sector based on the 80% of companies which reported this information. The concentration of R&D funds are in the health and agriculture sectors, with waste treatment, a distant, but important third.

In the 1986 Sourcebook, 85% of the 90 companies which reported on research personnel employed between 1-15 biotechnology researchers and only a few reported 50-150 researchers. Figure IV describes, by sector, current information from companies reporting personnel involved in biotechnology. The results mimic the R&D expenditures, except that the food and beverage sector is slightly ahead of waste treatment.

The 173 companies which reported information on the number of employees involved in biotechnology R&D were sized arbitrarily, by the number of biotechnology employees, as small (0-10), medium (11-20) or large (21 and over). The majority, 144 (83%), are in the small category, with an average of 3.8 employees; there are thirteen or 8% in the middle category with an average of 16 employees; while sixteen or 9% had an average of 45 employees. Only Allelix Inc. (3 Divisions) and Connaught Laboratories each reported over 100 employees carrying out biotechnology R&D activities. Typically, biotechnology companies or the research groups within large companies, are small. Table I provides summary figures for biotechnology expenditures and research personnel by reporting companies.

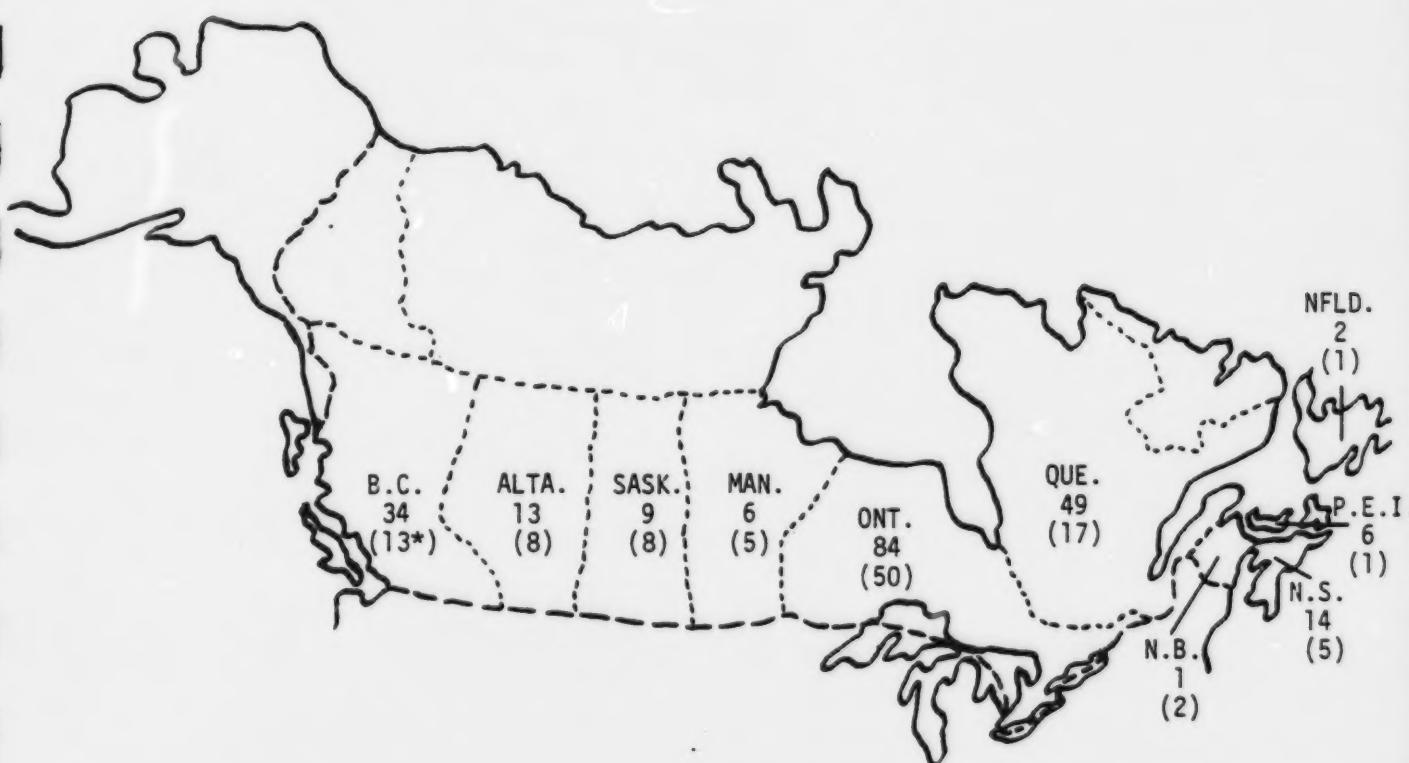
There has been an obvious growth both in terms of expenditures and numbers of personnel involved in biotechnology since the release of the 1986 sourcebook: indeed, the number of companies involved in biotechnology R&D between 1986 and April 1988 has increased 16%, (Figure V). The data indicate that, in this decade, 1984 was the single year in which the largest number of companies in biotechnology were begun (22); the average number of start-ups was 13 (Figure VI).

The reader must bear in mind when comparing this update to the 1986 sourcebook, that the former was not an exhaustive coverage of commercial organizations carrying out biotechnology R&D. Therefore, Table II must be examined with caution. However, it is apparent that there is a significant increase in R&D expenditures by Canadian companies and that biotechnology is a young and expanding industrial activity in Canada.

Figure 1

Geographical Distribution of Organizations
Carrying out Biotechnology R&D Activities
Listed in 1988 Biotechnology Sourcebook

N=218

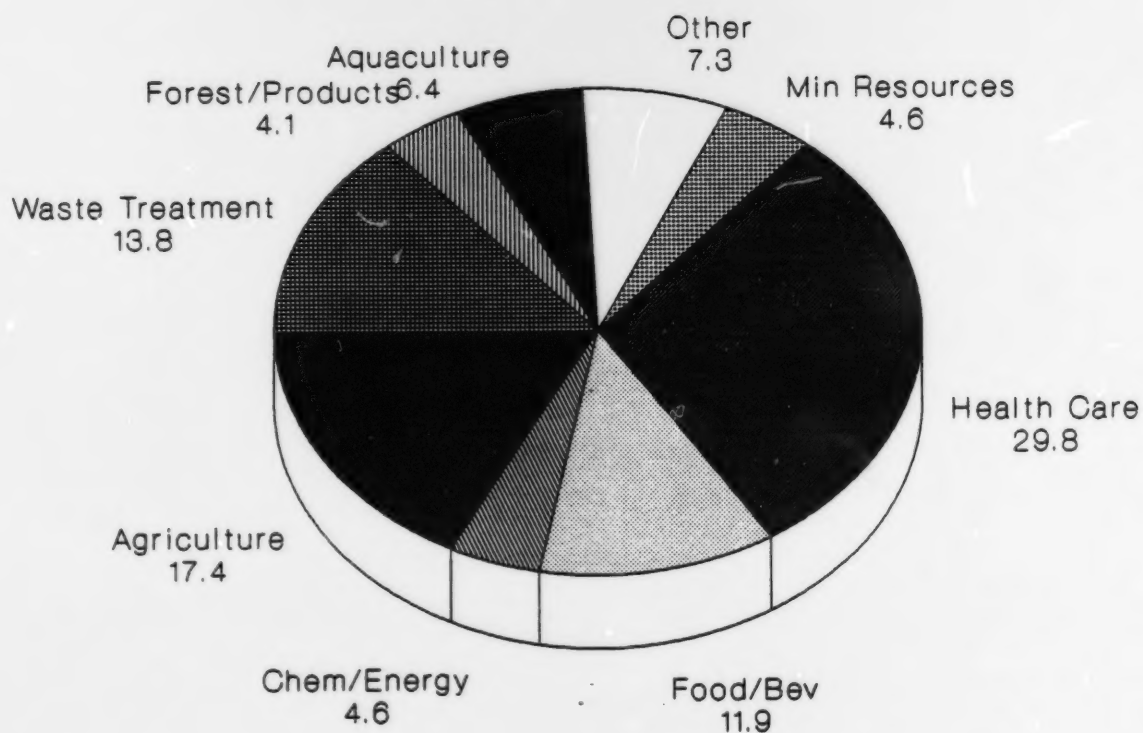


* Figures in parentheses are for 1986: N=110

Figure II

**Companies by Principal
Sector of Application ***

(% of Total)

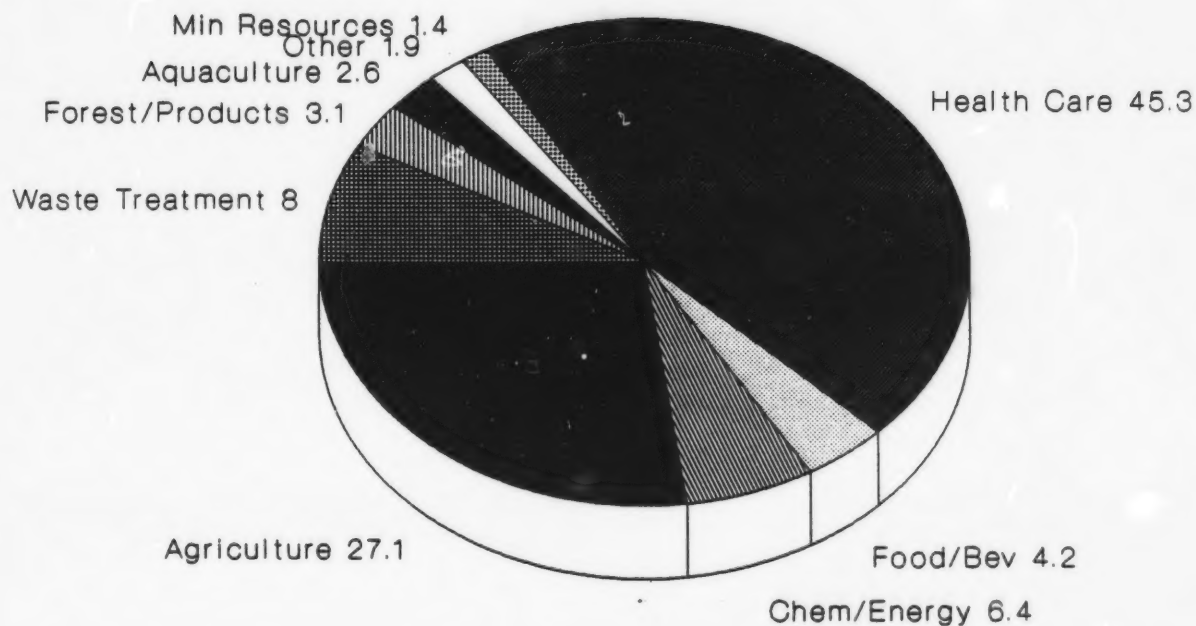


* N = 218

Figure III

**Biotechnology R&D Expenditures
by Sector ***

(% of Total)

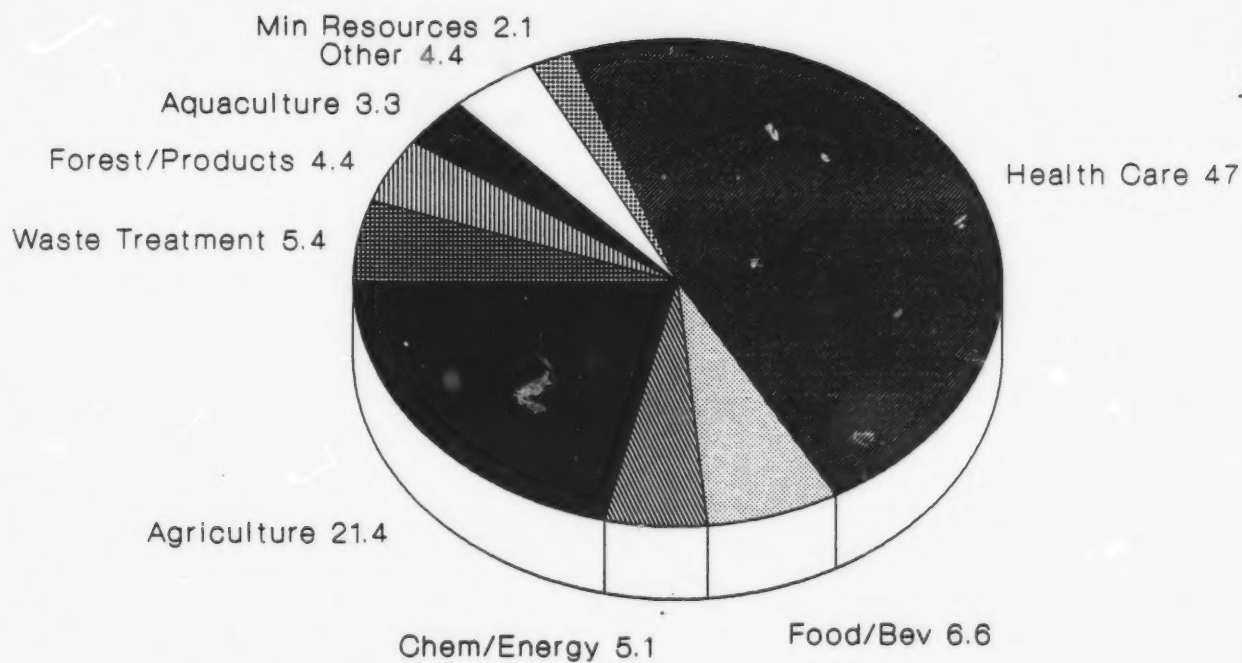


* Based on 174 (79.8%) companies reporting biotech expenditures

Figure IV

**Biotechnology R&D Employees
by Sector ***

(% of Total)



* Based on 173 (79.4%) companies reporting
biotech R&D employees

Figure V

**Companies Currently
Performing Biotechnology R&D**

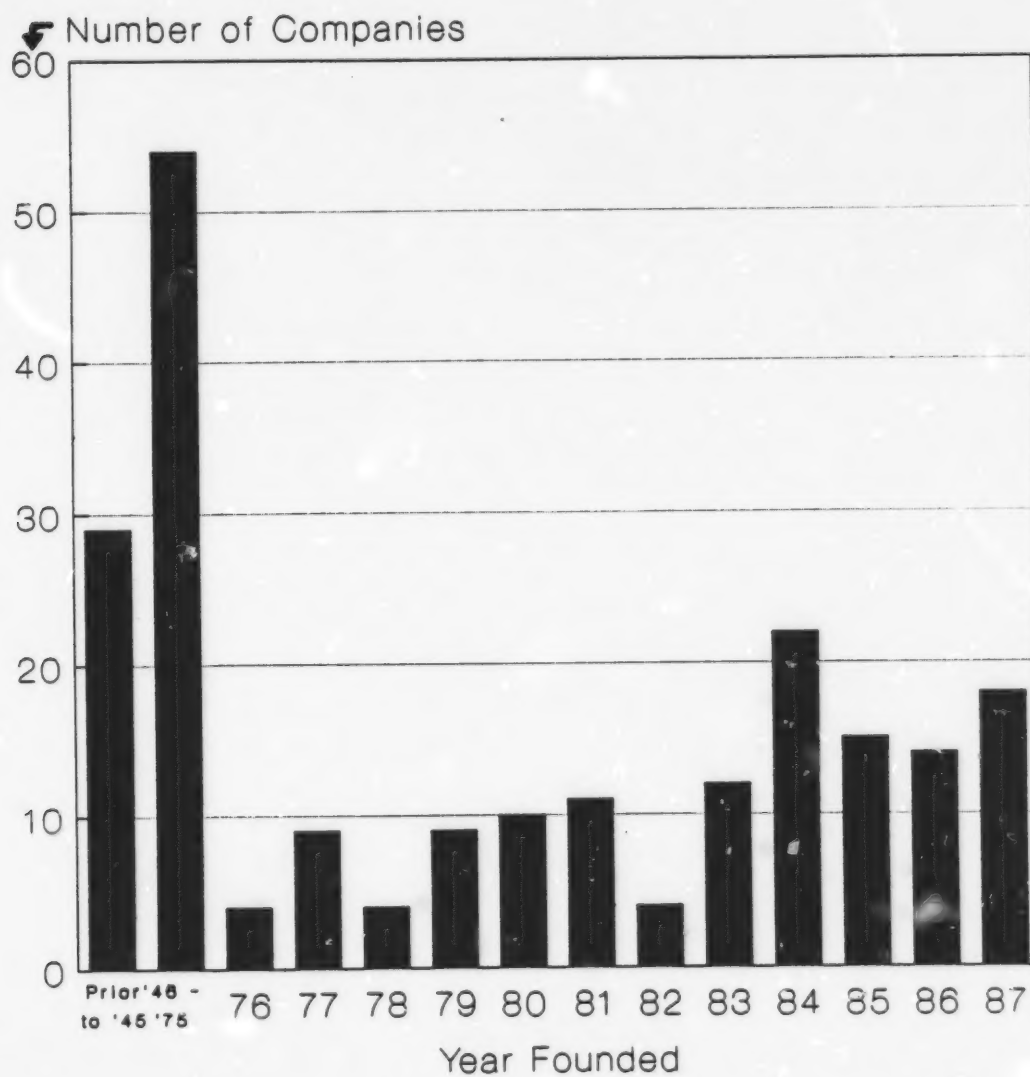


Figure VI

**Companies Currently
Performing Biotechnology R&D
(cumulative)**

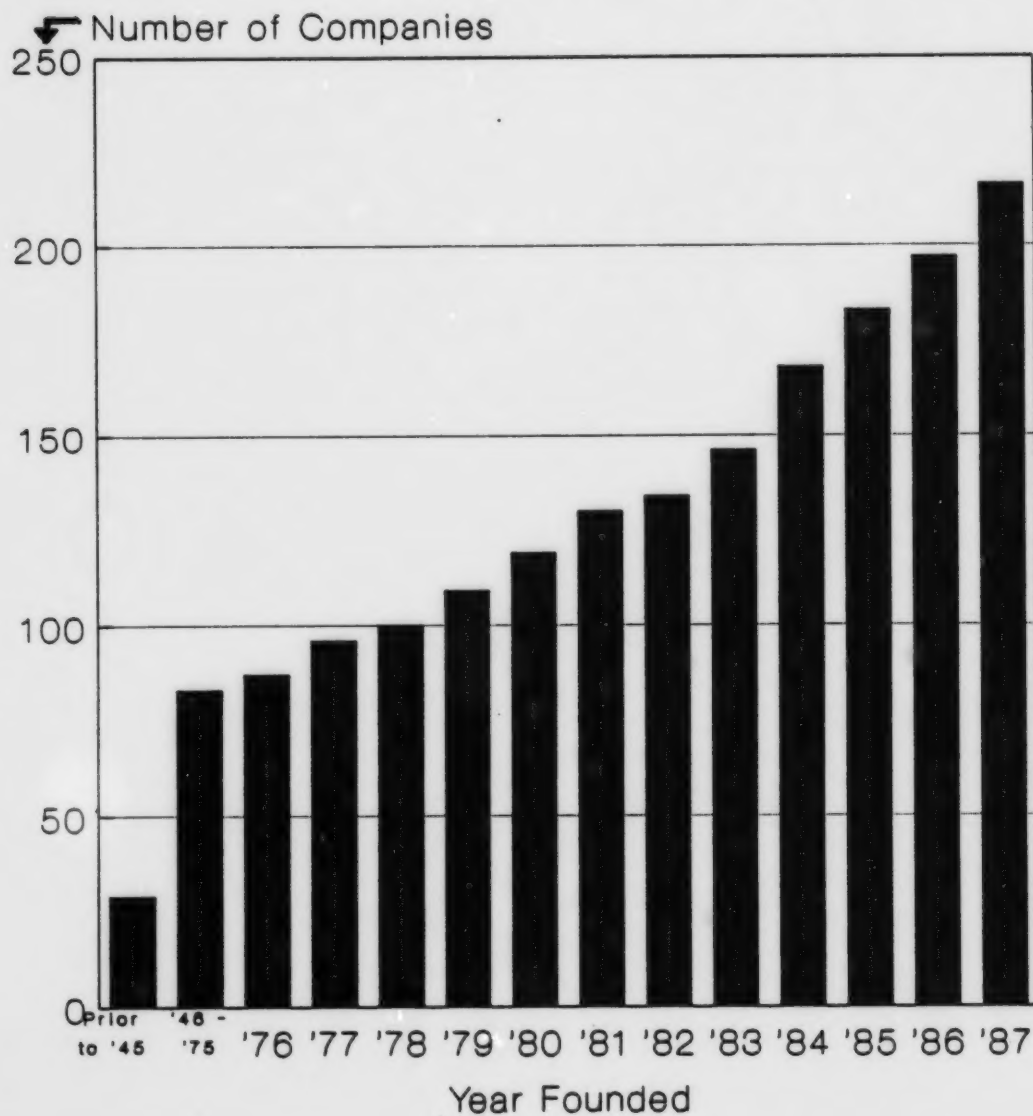


Table I
Organizations Reporting Biotechnology
Activities by Principal Sector

SECTOR	NUMBER OF ORGANIZATIONS REPORTING	BIOTECH R&D EXPEND. \$M	R&D EMP.	BIOTECH R&D EMP. (%)
AGRICULTURE	29	44.3	462.5	361.5 (78)
AQUACULTURE	13	4.3	63	49 (78)
CHEM/ALT. ENERGY	9	10.4	416	76 (18)
FOOD/BEV.	20	6.9	461	97 (21)
FORESTRY/ & PRODUCTS	9	5.0	907	65 (7)
HEALTH CARE	52	74.1	1075	698 (65)
MINING	9	2.3	230	31.5 (14)
WASTE	21	13.1	187	80.5 (43)
OTHER	12	3.1	82	65 (79)

Table II
R&D Expenditures and Researchers Reported by
Organizations Listed In The 1988 & 1986
Biotechnology Sourcebooks by Principal Sector
of Application

SECTOR	NUMBER OF ORGANIZATIONS	%	R&D EXPEND. REPORTED (MILLIONS) \$	%	NUMBER OF RESEARCHERS	%
AGRICULTURE (1986)	38 (13)	17 (12)	33.8 (18.3)	9 (28)	462.5 (211)	12 (24)
AQUACULTURE (1986)	14 (NO STATS)	6	6	2	63.1	1.6
CHEM/ALT. ENERGY (1986)	10 (NO COMPARABLE STATS)	5	41.7	12	416	10.7
FOOD/BEV. (1986)	26 (22)	12 (20)	37.5 (8)	10 (12)	461 (119)	12 (13)
FORESTRY/ & PRODUCTS (1986)	9 (11)	4 (10)	64.1 (4.5)	18 (7)	907 (49)	23 (6)
HEALTH CARE (1986)	65 (31)	30 (29)	123.7 (27.3)	34 (42)	1075 (368)	27.6 (41)
MINING (1986)	10 (5)	5 (4)	24.3 (2)	7 (3)	230 (21)	6 (2)
WASTE (1986)	30 (8)	14 (7)	22.7 (595)	6 (1)	187 (23)	4.7 (2)
OTHER (1986)	16 (10)	7 (9)	5.2 (2.8)	1 (4)	82 (76)	2 (9)
TOTAL (1986)	218 (110)		359.1 (65.6)		3883.6 (893)	

Table III
Index of Organizations by All
Sectors of Application

Agriculture (N=70)

Advanced Biotech Ltd.	Agriforest Technologies Ltd.
Allelix-Agriculture*	Applied Bionomics*
B2	Better Yield Insects*
Bio-Field Technologies	BioRex Groupe Conseil Inc.
Bioscan Continental Inc.	Biosystech Consulting Inc.
Biotechnica Canada Inc.	Blueberry Acres
Canadian Seed Coaters Limited*	Canber Industries Limited
Canpro Laboratories	CB Research International Corp.
CIAQ*	Chateau Des Charmes Wines
C-I-L	Ciba-Geigy Ltd. Agricultural Div.
Les Clay & Son Limited	CSP
Du Pont Canada Inc.	Elite Seed Potato Farm *
Endogro Systems Inc.	Enscor Inc.
Fermtech R&D Inc.	Gemini Biochemical Research Ltd.
Hara Products	Inrad Industrial R&D Ltd.
Inst. de Recherche Sylviechimie	Kilborn (Saskatchewan) Ltd.
King Agro*	Koppernaes Engineering Ltd.
Frank Maine Consulting Ltd.	Mann Testing Laboratories Ltd.
Marbicon Inc.	Meiogenics Research Corporation
MicroElite Plant Laboratories*	Microbe Inc.
Microtech Research & Development	Mycotek
Novo Laboratories	Paladin Hybrids Inc.*
Paracel Laboratories Ltd.	Phero Tech Inc.
Philom Bios Inc.*	POS Pilot Plant Corporation
Premier Peat Moss Ltd.*	ProPlant Garden Products*
Raylo Chemicals	Rhizogen Corp.
Institut Rosell	Safer Ltd.*
Semico Inc.*	Shaver Poultry Farms Ltd.*
Stake Technology Ltd.	St. Lawrence Reactors Ltd.
Sylvan Industries Ltd.	Syndel Laboratories Ltd.
Thermotech Waste Systems Inc.	W.G. Thompson & Sons Ltd.*
United Grain Growers*	Vetrepharm Inc.*
VIDO	Westech Agriculture Ltd.*
Western Biologicals Ltd.	W.H.E. Bio-Systems

* Applications of R&D in these companies apply to this sector only

Aquaculture (N=39)

Acadian Seaplants Limited*	Advanced Biotechnology Ltd.
Aqua Health Ltd.*	Aquaresearch Ltd.
B2 Enterprises Ltd.	Bay D'Espoir Salmon Hatchery
B.C. Research Corporation	Bio Field Technologies Research
Bionov CNP Inc.	Biorex Groupe Conseil Inc.
Canber Industries Limited	Canpolar Inc.
Carratech Inc.	Clearwater Fine Foods*
Coolwater Farms Limited	Envirocon Pacific Ltd.*
Fermtex R&D Inc.	FMG Integrated Biotechnical Labs.*
Gemini Biochemical Research Ltd.	Helix Biotech Ltd.
J.D. Koppernaes Engineering Ltd.	P. Lane and Associates Limited
D. McLeay & Associates Ltd.	Microtek Research & Development
Mycotech	Nova Chem Limited
Pisciculture Des Alleghany Ltd.	Pollutech Limited
Purdel Coop. Agroalimentaire	Quality Sea Farms Ltd.*
Royal Pacific Sea Farms	Seasprings Farms Ltd.
B.V. Sorbex	Specialty Marine Products Ltd.
Syndel Laboratories Ltd.	Terra Nova Fishery Co. Ltd.
Vancouver Island Antibodies	

* Applications of R&D in these companies apply to this sector only

Chemicals & Alternate Energy (N=39)

B2 Enterprises Ltd.	Bioprotein Canada Inc.
Biosyn	Brookside Farms Ltd.
Canber Industries Limited	Carratech Inc.
CB Research International Corp.	Centre de Recherche en Sylvichemie
CSP Foods Ltd.	Cyanamid Canada Inc.*
Dearborn Chemical Company Limited	Diagnostic Chemicals Limited
Diversified Research Laboratories	Domtar Inc.
Du Pont Canada Inc.	Export Packers Company Limited
Elanco	Forintek Canada Corp.
Gelda Scientific	Gemini Biochemical Research Ltd.
Griffith Laboratories Limited	Iogen Corporation
Frank Maine Consulting Ltd.	Nelson's Dairy
Noranda Research Centre	Nova Husky Research Corp. Ltd.
Pegasus Industrial Specialties	Phero Tech Inc.
POS Pilot Plant Corporation	Raylo Chemicals
Serdary Research	SNC Inc. (Le Groupe)
Stake Technology Ltd	TCI-Superior Div. Mueller Canada
Thermo Tech & Waste Systems Inc.	Waitaki International Biosciences
Wardrop Engineering Inc.	W.H.E. Biosystems Inc.
Zeton Inc.	

* Applications of R&D in these companies apply to this sector only

Food/Beverages (N=62)

Acadian Seaplants	ADI Limited
ADS	Advanced Biotechnology Ltd.
Agropur Cooperative*	Aliments Carriere (Les)*
Allelix-Agriculture	Allelix-Biochemicals
Aquaterre Inc.	Aquaresearch Ltd.
B2	BC Research Corporation
Bionov CNP	Biorex Groupe Conseil Inc.
Biosystech Consulting Inc.	Brookside Farms
Canber Industries Limited	Canpolar Inc.
Canviro Consultants	Casco Inc.
Champlain Industries Limited*	Chateau des Charmes Wines*
Coolwater Farms Limited	CSP Foods
Dairyland Foods (FVMPCA)*	Diversified Research Laboratories
Domtar Inc.	Export Packers Company Limited
Fermtech R&D Inc.	Gelda Scientific & Res. Dev.
Gendron Lefebvre	Gore & Storrie Ltd.
Griffith Laboratories Limited	Iogen Corporation
J.D. Koppnaes Engineering	Labatt Brewing Co. Ltd.*
Lallemande Inc.*	A. Lassonde & Fils Inc.*
Meiogenics Research Corporation	Molson Breweries of Canada Ltd.*
Mycotech	Nelson's Dairy
Novo Laboratories Ltd.	Paques-Lavalin
Pegasus Industrial Specialties	Pollutech Limited
POS Pilot Plant Corporation	Purdell Coop. Agroalimentaire
QA Laboratories Limited*	Institut Rossell Inc.
Joseph E. Seagram & Sons Ltee	Le Groupe SNC Inc.
Stake Technology Ltd.	St. Lawrence Reactors Ltd.
Sylvan Industries Ltd.	TCI-Superior Div. Mueller Canada
Terra Nova Fishery Co. Ltd.	Thermo Tech Waste Systems Inc.
Wardrop Engineering	W.H.E. Bio-Systems

* Applications of R&D in these companies apply to this sector only

Forestry (N=41)

Agriforest Technologies Ltd.	Aquaresearch Ltd.
B2 Enterprises Ltd.	BC Research Corporation
Balco Canfor Reforestation*	Biotechnica Canada Inc.
Blueberry Acres	Canber Industries Limited
Centre de Recherche/Sylvichimie	C-I-L Inc.
Les Clay & Son Limited	Diversified Research Laboratories
Domtar Inc.	Enscor Inc.
Forintek Canada Corp.	Gemini Biochemical Research Ltd.
Hara Products	Inrad Industrial R&D Ltd.
Iogen Corporation	Kilborn (Saskatchewan) Ltd.
MacMillan Bloedel Ltd.	Frank Maine Consulting Ltd.
Mann Testing Laboratories Ltd.	Marbicon Biological Consultants
D. McLeay & Associates Ltd.	Microtech Research & Development
Mycotek	Noranda Research Centre
Paques-Lavalin	Pegasus Industrial Specialties
Phero Tech Inc.	Pulp & Paper Research Centre
Rhizogen Corp.	Rhizotech Inc.
Stake Technology Ltd.	St. Lawrence Reactors Ltd.
TCI-Superior Division Mueller	Thermo Tech Waste Systems Inc.
Wardrop Engineering Inc.	Western Biologicals td.
W.H.E. Bio-Systems	

* Applications of R&D in these companies apply to this sector only

Health Care (Animal, Fish, Human) (N=94)

AB Biological Supplies*	H	ABI Biotechnology	A,H
Allelix-Biochemicals	H	Allelix-Diagnostics	A,H
Alta Genetics Inc.*	H	APO Diagnostics Inc.	H
B2 Enterprises Ltd.	A,H	Bio-Mega Inc.	A,H
Biomira Inc.*	H	Bio-Research Labs	A,H
Biorex Groupe	F	Bioscan Continental	A,H
Biostar Inc.*	A	Biosystech Consulting	A,H
Brookside Farms Ltd.	H	Bocknech Ltd.*	H
Canadian Bioclinical*	A,H	Canadian Liposome*	A,H
Canber Industries Ltd.	A	Cangene Corporation*	H
Canpolar Inc.	H	Canpro Laboratories	H
Cedarlane Laboratories*	H	Chembiomed Limited*	H
Chemfet Canada*	H	Ciba-Geigy Ltd.	A
Connaught Labs*	H	Continental Cryosan	H
Corp. BDG*	H	Cosem Neurostem Ltee*	H
Cyberfluor Inc.*	H	Canadian Red Cross*	H
Dextran Products Ltd.*	A	Diagnostic Chemicals	H

Dominion Biologicals	H	Domtar Inc.	H
Elanco (Lilly)	A,H	Enscor Inc.	H
Equipment Moniteur	H	Fermtech R&D Inc.	H
Frappier Diagnostics*	A,H	Helix Biotech Ltd.*	A
Hybrisens Ltd.*	H	Hypercube Inc.*	H
IAF Biochem*	A,H	Joldon Diagnostics*	A,H
Kemic Bioresearch*	H	Langford Inc.*	A
Mann Testing Labs	A	MDS Health Group*	H
Merck Frosst*	H	Medicorp Inc.*	H
Meiogenics Research	A,H	Microbe Inc.	H
Microbix Biosystems*	H	Microtek R&D	A
New Age Devices*	H	Nova Chem Ltd.	H
Novo Laboratories*	H	Ortho Pharmaceutical*	H
Pacific Pharm. Ltd.*	H	Paliser Animal Health*	A
Paracel Labs. Ltd.	A,H	Pegasus Industrial	A,H
Pharmacia	H	POS Pilot Plant Corp.	H
Precision Biologicals*	H	Probtech Corp.*	H
Quadra Logic Tech.*	H	Raylo Chemicals	H
Research Dev'ment (HSC)	H	Institut Rosell Inc.	A,H
Rutland Biotech Ltd.	H	SCI Can Diagnostics*	H
Serdary Research Labs.*	H	B.V. Sorbex	A
Specialty Marine	F	Spectrex Ltd.	H
SPI Synthetic Peptides*	H	Syndel Laboratories*	A,F
Synphar Labs/Taiho, Alta	H	Syntex*	H
TCI-Superior Div. Mueller	H	Tech Marketing	H,A
Thermo Tech Waste Systems	A	Tyler Research Inst.	H
Vancouver Is. Antibodies*	H	Vetrepharm*	A
VIDO	A	Wataki International	H
W.H.E. Bio-Systems	A,H	Winnipeg RH Institute*	H
Xymotech Biosystems*	H		

* Applications of R&D in these companies are to this sector only

Mineral Resources (N=29)

Aquaresearch Ltd.	B2 Enterprises Ltd.
BC Research Corporation	Beak Consultants Ltd.
Boojum Research Ltd.	Canber Industries Limited
Canpro Laboratories	Canviro Consultants
Cape Breton Dev'ment Corp.*	CB Research International
Coastech Research Inc.*	Denison Mines*
Domtar Inc.	Falconbridge Ltd.
Gemini Biochemical Research Ltd.	Giant Bay Resources
P. Lane & Associates Limited	Mycotech
Noranda Research Centre	Pegasus Industrial Specialties
Pollutech Limited	Recbiomine Inc.*
Rhizogen Corp.	Rio Algom Limited*
SNC (Le Groupe)	B.V. Sorbex Inc.
TMG Inc.	W.H.E. Bio-Systems
Zeton Inc.	

* Applications of R&D in these companies apply to this sector only

OTHER (N=16)

Bioquest
Canpolar
Hypercube Inc.
Pegasus
Spectrex
Tech Marketing
Wardrop Engineering
Xymotech

Biosystech
Essa - Environmental Analysts
Mycotech
Pollutech
Stake Technology
Tyler Research Instruments
WHE Biosystems Inc.
Zeton Inc.

Waste Treatment (N=58)

ADI Limited
Aquaresearch Ltd.
BC Research Corporation
Biogenie S.R.D.C. Inc.*
Bionov CNP Inc.
Bioquest International*
Biorex Groupe Conseil Inc.
Biosyn
Canber Industries Limited
Canviro Consultants
Centre de Recherche en Sylvichemi
Dearborn Chemical Company Ltd.
Diversified Research Laboratories
Export Packers Company Limited
Falconbridge Ltd.
Gemini Biochemical Research Ltd.
Gore & Storrie Ltd.
Kilborn (Saskatchewan) Ltd.
Gendron Lefebvre*
John Meunier Inc.*
Mycotech
Nova Huskie Research Corporation
Pegasus Industrial Specialties
Rutland Biotech Limited
Seasprings Farms Ltd.
B.V. Sorbec Inc.
Temfibre Inc.*
Thermo Tech Waste Systems
W.H.E. Bio-Systems

ADS Environnement Inc.*
Aquaterre Inc.
Beak Consultants
Bio-Hol Developments*
Bioprotein Canada Inc.
Bio-Response Systems Ltd.*
Bioshell Inc.*
Boojum Research Ltd.
Canpolar Inc.
CB Research International Corp.
Coolwater Farms Ltd.
Degremont-Infilco Ltee*
Domtar Inc.
Enviromine Inc.
Fermtech R&D Inc.
Giant Bay Resources Ltd.
Inst. for Chemical Science/Tech
P. Lane & Associates
MacMillan Bloedel Ltd.
Microbe Inc.
Noranda Research Centre
Paques-Lavalin
Pollutech Limited
Sanenex International*
SNC Inc. (Le Groupe)
TCI-Superior Division of Mueller
TMG Inc. (Niobec Mine)
Wardrop Engineering Inc.
Zymotech Biosystems

* Applications of R&D in these companies apply to this sector only

APPENDIX



CANADA'S NATIONAL BIOTECHNOLOGY STRATEGY

Canada's industrial and research sectors are facing the challenge and promise of a powerful new form of technology: biotechnology.

Today, the biological activities of microbial, plant and animal cells are being applied in increasingly sophisticated ways to develop new products and to improve production processes. Food, drugs, medical diagnostics, chemicals, agriculture, mining and waste processing are being transformed by the new biological technologies. Canada's ability to remain competitive in the resource sectors and to build new industries, will depend on a strong capacity in biotechnology.

Recognizing the above, the federal government commits \$11 million annually to support the National Biotechnology Strategy and the Ministry of State for Science and Technology has been given responsibility for overseeing the Strategy.

The goals of the Strategy are to enhance scientific research applications, increase the supply of highly qualified personnel, increase scientific cooperation and technology transfer, and foster an economic and regulatory climate conducive to commercial biotechnology investment and activity. To achieve these goals, several activities have been initiated.

First, the National Biotechnology Advisory Committee was established in 1983 to advise the Minister of State (Science and Technology) on the development of biotechnology in Canada and to report on the National Strategy. Representatives from industry, university and federal government departments and agencies involved in, or funding, R&D related to biotechnology ensure that there is broad input into policy development.

As part of its activities, the Committee has organized a series of policy workshops on topics such as Engineering and Fermentation (Vancouver), Agriculture (Saskatoon and Ottawa) and regional biotechnology seminars (Halifax and Edmonton). The Committee has also given special attention to the impact of biotechnology on specific sectors such as agriculture and food, health care and forestry, and to policies designed to accelerate technology transfer and commercialization. Publications and reports stemming from the activities of the Committee are available from the Secretariat.

Second, under the Strategy the national Biotechnology R&D Networks have been established to facilitate communication and cooperation between the performers and users of research. Each Network is administered by a federal department and membership is open to

industry, university and government researchers who are actively working in relevant fields. A list containing further information and the names of the coordinators for each Network is included with this Appendix.

Third, the Strategy includes a federal cost-shared program administered by the National Research Council through the Industrial Research Assistance Program (IRAP). Under the Program, industries are eligible to apply for federal grants provided that they are collaborating with, or sub-contracting biotechnology research to, universities or provincial research organizations. The Program encourages technology transfer from university, federal and provincial government laboratories, where the research base for future development currently exists, to industry. This Program includes support for both national and international collaborations.

Fourth, through the federal departments actively involved in research, the Strategy supports scientific collaboration by means of equipment sharing and personnel exchanges between research and development groups in various sectors, and through international collaboration. Joint research projects between industry and government or university labs are particularly encouraged. The federal biotechnology research capacity has been strengthened with funds from the Strategy in order to facilitate these interactions. In addition, the federal commitment to biotechnology is demonstrated by the establishment of the Biotechnology Research Institute and other activities at the National Research Council; Agriculture Canada has expanded its activities in plant, animal and food biotechnology. Other federal departments such as Health and Welfare and Energy, Mines and Resources and Fisheries and Oceans also have biotechnology programs and the federal granting councils provide support for research carried out at Canadian universities.

Finally, a federal Interdepartmental Committee has been formed to coordinate activities under the Strategy. Representatives of key federal departments involved in biotechnology meet regularly to consider scientific, budgetary, international and regulatory issues. In cooperation with these departments, the Ministry of State for Science and Technology is currently involved in the review of patenting and safety and regulations issues.

NATIONAL BIOTECHNOLOGY STRATEGY/CONTACTS:

BIOTECHNOLOGY SECRETARIAT

Ministry of State for Science and Technology,
240 Sparks St., 8th Floor West, Ottawa, Canada, K1A 1A1

National Biotechnology Advisory Committee
Interdepartmental Committee on Biotechnology
Contact: M. Louise McArthur - 613/993-6045

IRAP - BIOTECHNOLOGY FUNDING PROGRAM

Dr. J.D. Robar - 613/993-1790
General Manager, IRAP & Laboratory Network
National Research Council of Canada

THE NATIONAL BIOTECHNOLOGY NETWORKS

NAME	AREA	DEPARTMENT(S)	COORDINATOR(S)	TELEPHONE
<u>BIONIF</u>	Nitrogen Fixation	Agriculture Canada	Dr. L.R. Barran	613/995-3700
<u>BIOCROP</u>	Plant Strain Development		Dr. W. Kellar	613/995-3700
<u>BIONET</u>	Human and Animal Health Care Products	National Health and Welfare	Dr. Keith Bailey	613/957-1058
		Agriculture Canada	Dr. Jim Pantekoek	613/995-5433
<u>BIOMINET</u>	Mineral Leaching and Metal Recovery	Energy, Mines and Resources	Dr. R.G.L. McCready	613/990-6945
<u>BIOFOR</u>	Forestry and Forest Products	National Research Council	Mr. Wayne Campbell	613/993-7659
<u>BIOQUAL</u>	Waste Treatment	National Research Council	Dr. P. Matteau	613/993-7630
<u>AQUATECH</u>	Fisheries/Marine Aquaculture	Fisheries and Oceans	Dr. G. Ian Pritchard	613/990-0275

DIRECTORY

ALPHABETICAL INDEX OF ORGANIZATIONS

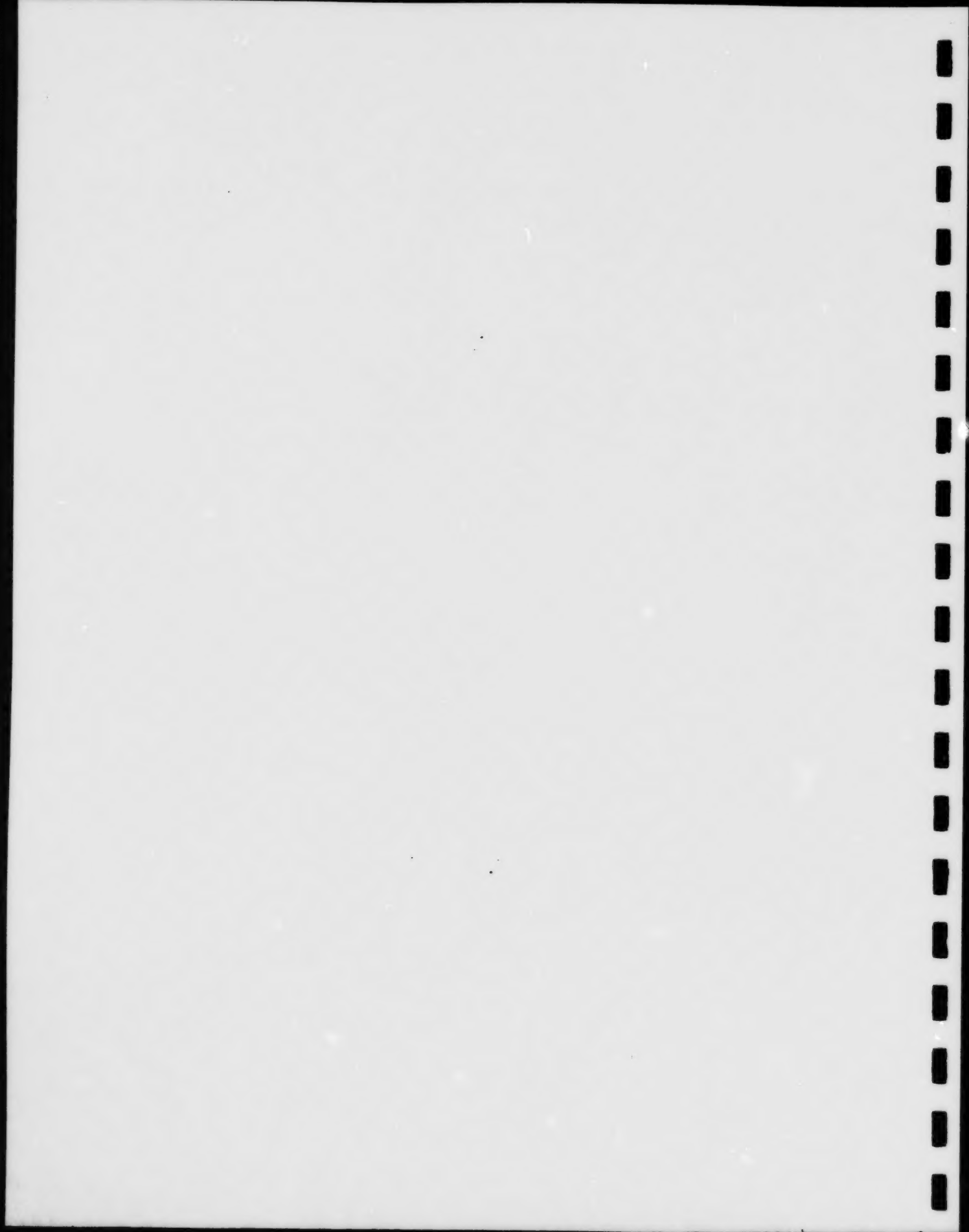
AB Biological Supplies Inc.
ABI Biotechnology Inc.
Acadian Seaplants Ltd.
ADI Limited
ADS Environnement Inc.
Advanced Biotechnology Ltd.
Agriforest Technologies Ltd.
Agropur Coopérative Agro-alimentaire
Aliments Carrière Inc. (Les)
Allelix Agriculture
Allelix Biochemicals
Allelix Diagnostics Inc.
Alta Genetics Inc.
APO Diagnostics Inc.
Applied Bio-Nomics Ltd.
Aqua Health Ltd.
Aquaresearch Ltd./Aquarecherche Ltée
Aquateerre Inc.
B2 Enterprises Ltd.
Balco Canfor Reforestation Centre Ltd.
Bay D'Espoir Salmon Hatchery Ltd.
B.C. Research Corporation
Beak Consultants Ltd.
Better Yield Insects
Biochem International Inc.(IAF)
Bio Field Technologies Research Inc. (Northern Soils Technologies)
Biogénie S.R.D.C. Inc.
Bio-Hol Developments
Bio-Méga Inc.
Biomira Inc.
Bionov CNP Inc.
Bioprotein Canada Inc.
Bioquest International, Inc.
Bio-Research Laboratories
Bio-Response Systems Ltd.
Biorex Groupe Conseil Inc.
Bioscan Continental Inc.
Bioshell Inc.
Biostar Inc.
Biosyn
Biosystech Consulting Inc.
Biotechnica Canada Inc.
Blueberry Acres Limited
Bocknek Ltd.
Boojum Research Ltd.
Brookside Farms Ltd.

Canadian Bioclinical
Canadian Liposome Co. Ltd. (The)
Canadian Red Cross Society (Blood Transfusion Service)
Canadian Seed Coaters Limited
Canber Industries Limited
Cangene Corporation
Canpolar Inc.
Canpro Laboratories (Research Foods)
Canviro Consultants
Cape Breton Development Corporation
Carratech Inc.
Casco Inc.
CB Research International Corporation
Cedarlane Laboratories Limited
Centre de Recherche en Sylvichimie de l'Outaouais Inc.
Centre d'Insémination Artificielle du Québec (CIAQ) Inc.
Champlain Industries Limited
Chateau Des Charmes Wines
Chembiomed Limited
Chemfet Canada Ltd.
Ciba-Geigy Ltd. (Agricultural Division)
C-I-L Inc.
Les Clay & Son Limited
Clearwater Fine Foods Inc.
Coastech Research Inc.
Connaught Laboratories Limited
Continental Pharma Cryosan Inc.
Coolwater Farms Limited
Corporation BDG
Cosem Neurostim Ltée
CSP Foods Ltd.
Cyanamid Canada Inc.
Cyberfluor Inc.
Dairyland Foods, F.V.M.P.C.A.
Dearborn Chemical Company Limited
Degremont - Infilco Ltée
Denison Mines Limited
Dextran Products Limited
Diagnostic Chemicals Limited
Diversified Research Laboratories Limited
(Division of George Weston Ltd.)
Dominion Biologicals Limited
Domtar Inc.
Du Pont Canada Inc.
Elanco (Division of Eli Lilly Canada Inc.)
Elite Seed Potato Farm
Endogro Systems Inc.
Encor Inc.
Envirocon Pacific Ltd.
Enviromine Inc.

Equipment Moniteur Inc.
Essa - Environmental & Social Systems Analysts Ltd.
Export Packers Company Limited
Falconbridge Limited
Fermtech R&D Inc.
FMG Integrated Biotechnical Laboratories Ltd.
Forintek Canada Corp.
Frappier Diagnostic Inc.
Gelda Scientific and Industrial Development Corp.
Gemini Biochemical Research Ltd.
Gendron Lefebvre
Giant Bay Resources Ltd.
Gore & Storrie Ltd.
Griffith Laboratories Limited
Hara Products Ltd.
Helix Biotech Ltd.
Hybrisens Ltd.
Hypercube Inc.
Inrad Industrial Research & Development, Ltd.
Institute for Chemical Science and Technology (ICST)
Iogen Corporation
Joldon Diagnostics
Kemic Bioresearch Laboratories Ltd.
Kilborn (Saskatchewan) Ltd.
King Agro
J.D. Koppernaes Engineering Ltd.
Labatt Brewing Company Ltd.
Lallemand Inc.
P. Lane and Associates Limited
Langford Inc.
A. Lassonde & Fils Inc.
MacMillan Bloedel Limited
Frank Maine Consulting Ltd.
Mann Testing Laboratories Ltd.
Marbicon Inc.
D. McLeay and Associates Ltd.
MDS Health Group Limited
Medicorp Inc.
Meiogenics Research Corporation
Merck Frosst
John Meunier Inc.
Microbe Inc.
Microbix Biosystems Inc.
MicroElite Plant Laboratories Inc.
Microtek Research and Development
Molson Breweries of Canada Limited
Mycotech - For Research and Development
Nelson's Dairy
New Age Devices
Noranda Research Centre

Nova Chem Limited
Nova Husky Research Corporation Limited
Novo Laboratories Ltd.
Ortho Pharmaceutical (Canada) Ltd.
Pacific Pharmaceuticals Ltd.
Paladin Hybrids Inc.
Palliser Animal Health Laboratories Ltd.
Paques Lavalin
Paracel Laboratories Ltd.
Pegasus Industrial Specialties Ltd.
Pharmacia (Canada) Inc.
Phero Tech Inc.
Philom Bios Inc.
Pisciculture Des Alleghanys Inc.
Pollutech Limited
POS Pilot Plant Corporation
Precision Biologicals Inc.
Premier Peat Moss Limited (Tourbières Premier Ltée (Les))
Probtec Corporation
Proplant Garden Products Ltd.
Pulp and Paper Research Institute of Canada (PAPRICAN)
Purdel Cooperative Agro-alimentaire
Q A Laboratories Limited
Quadra Logic Technologies Inc.
Quality Seafarms Ltd.
Raylo Chemicals (Division of Terochem Laboratories Ltd.)
Recbiomine Inc.
Research Development Corporation (Hospital for Sick Children)
Rhizogen Corp.
Rhizotec Inc. (Les Laboratoires)
Rio Algom Limited
Institut Rosell Inc.
Royal Pacific Sea Farms Ltd.
Rutland Biotech Limited
Safer Ltd.
Sanenex International Inc.
Sci Can Diagnostics
Joseph E. Seagram & Sons Limitée
Seasprings Farms Ltd.
Semico Inc.
Serdary Research Laboratories Inc.
Shaver Poultry Breeding Farms Limited
SNC Inc. (Le Groupe)
B.V. Sorbex Inc.
Specialty Marine Products Ltd.
Spectrex Ltée/Ltd.
S.P.I. Synthetic Peptides Inc.
Stake Technology Ltd.
St. Lawrence Reactors Ltd.
Sylvan Industries Ltd.

Syndel Laboratories Ltd.
Synphar Labs Inc. and Taiho Alberta Ltd.
Syntex Inc.
TCI-Superior Division Mueller Canada Inc.
Technical Marketing Associates Limited
Temfibre Inc.
Terra Nova Fishery Co. Ltd.
Thermo Tech Waste Systems Inc.
W.G. Thompson & Sons Ltd.
T.M.G. Inc. (Les Services - Niobec Mine)
Tyler Research Instruments Corporation
United Grain Growers
Vancouver Island Antibodies Ltd.
Veterinary Infectious Disease Organization (VIDO)
Vetrepharm Inc.
Waitaki International Biosciences
Wardrop Engineering Inc.
Westech Agriculture Ltd.
Western Biologicals Ltd.
W.H.E. Bio-Systems (Division of W.H.E. Process Systems Limited)
Winnipeg RH Institute Inc.
Xymotech Biosystems/Biosystèmes Inc.
Zeton Inc.



AB BIOLOGICAL SUPPLIES INC.

HEAD OFFICE

P.O. Box 85
Grimsby, Ontario L3M 4G1

Telephone:
Telex:
Fax:

President: **G. Machan**
Telephone: **(416) 945-9661**
R & D Director: **Dr. J. Gauldie**
Telephone:

Employees: **6**
R & D Employees: **4**

RESEARCH FACILITY

20 Mural Street, Unit 4
Richmond Hill, Ontario L4B 1K3

Telephone: **(416) 731-0300**

Founded: **1978**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Development of monoclonals from beginning to diagnostic kit form, including dipstick methodology.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Newer types of diagnostic kits using monoclonal antibodies for infectious diseases, plastic and membrane-bound reactions.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: **Affiliate lab of NRC Ottawa.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint venture.**

COMMENTS:

CONTACT PERSON: **G. Machan, President.**

OTHER ACTIVITIES:

ABI BIOTECHNOLOGY INC.

HEAD OFFICE

**A-1150 Waverley Street
Winnipeg, Manitoba R3T 0P4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(204) 477-6413**

Telex:

Fax: **(204) 284-1021**

President: **A.D. Friesen**

R & D Director: **John Langstaff**

Telephone: **(204) 477-6413**

Employees: **23**

R & D Employees: **20**

(In biotechnology: **18-22**)

Founded: **1984**

Annual Sales: **\$0-1M**

R & D Expenses: **\$1-3M**

(In biotechnology: **\$1.4M**)

PRINCIPAL ACTIVITIES: Growth factors, diagnostics.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Anti-cancer drug development, rDNA interleukin-2, Mab-based diagnostics.

MANUFACTURING: Virocidin-X disinfectant; Intoxi-stick alcohol test stick; UV chroma + UV monitor.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Bio-Technology General Corp.; Cangene - Genelabs; Clonal Research Limited Partnership.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint-Ventures; Technology licensing.

COMMENTS:

CONTACT PERSON: A.D. Friesen, Ph.D, President.

ACADIAN SEAPLANTS LTD.

HEAD OFFICE

**202 Brownlow Avenue
Tower D, Suite 304
Dartmouth, Nova Scotia B3B 1T5**

Telephone: (902) 488-2840
Telex: via New York 7601211 ACAD UC
Fax: (902) 488-3474

President: **Louis E. Deveau, P. Eng.**

R & D Director: **Robert P. Welland**
Telephone: **(902) 723-2152**

Employees: **16**
R & D Employees: **6**

RESEARCH FACILITY

**Charlesville Cultivation Site
P.O. Box 25
Lower East Pubnico, Yarmouth Co.
Nova Scotia B0W 2A0**

Manufacturing Director:
Clarence J. Doucette

Telephone: **(902) 742-9159**

Founded: **1980**
Annual Sales: **\$3M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Cultivation, processing and development of seaweed and seaweed products, marketing of same.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Marine plant cultivation.**

MANUFACTURING: **Seaweed products based on Irish moss (*Chondrus crispus*) and Norwegian kelp (*Ascophyllum nodosum*).**

SALES/OTHER(S): **Seaweed and seaweed products.**

OTHER ACTIVITIES:

AFFILIATIONS: **Aquaculture Association of Nova Scotia; Canadian Aquaculture Association; Marine Technology Society.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Louis E. Deveau, President.**

ADI LIMITED

HEAD OFFICE

**1133 Regent Street
Fredericton, New Brunswick E3B 3Z2**

RESEARCH FACILITY

Same as Head Office

Telephone: (506) 452-9000
Telex: 014-46244
Fax: (506) 459-3954

Telephone: (506) 452-9000

President: **John R. Dean**

R & D Director: **Robert C. Landine**
Telephone: (506) 452-9000

Employees: **105**
R & D Employees: **1-5**
(In biotechnology: **1-5**)

Founded: **1945**
Annual Sales: **\$5-7M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Professional design consultants specializing in building design, environmental protection, power and process engineering and public works engineering

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Anaerobic wastewater treatment for warm, strong, organic wastewater from a wide variety of sources.

MANUFACTURING: Design of treatment systems.

SALES/OTHER(S): Worldwide.

OTHER ACTIVITIES:

Wood-fired heating; energy conservation.

AFFILIATIONS: Water Pollution Control Federation; Pollution Control Association of Ontario; American Water Works Association.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Licensing of technology outside of North America, technology transfer with designers in Third World.

COMMENTS: ADI is one of North America's leading firms in the research, design and application of anaerobic wastewater treatment systems.

CONTACT PERSON: Robert C. Landine

ADS ENVIRONNEMENT INC.

HEAD OFFICE

2155, rue Guy, Suite 1200
Montréal (Québec) H3H 2L9

RESEARCH FACILITY

Research is carried out by Laval
University and in cooperation with
private industry.

Telephone: (514) 932-4454
Telex: 055-80514
Fax: (514) 932-1518

Directors: A. D'Aragon, R. Desbiens, C. Lavoie.

R & D Directors: René Fontaine, M.Sc., Gaston Picard, Ph.D.
Telephone: (514) 932-4454

Employees: 35
R & D Employees: 5

Founded: 1984
Annual Sales: N/A
R & D Expenses: \$0.5-1M

PRINCIPAL ACTIVITIES: Waste treatment. Food for animals and beverages.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Treatment of hydrocarbon- con-
taminated oils. Treatment of wastewaters.

MANUFACTURING: Ultrafiltration. Food products for animals.
Production of food proteins.

SALES/OTHER(S):

AFFILIATIONS: ADS-Biotechnologie.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSONS: A. D'Aragon, Tel.: (514) 932-4454; R. Fontaine, Tel.: (514) 932-4454.

OTHER ACTIVITIES:

ADVANCED BIOTECHNOLOGY LTD.

HEAD OFFICE

**28355 Fraser Highway
Aldergrove, British Columbia V0X 1A0**

Telephone: **(604) 533-4444**
Telex:
Fax: **(604) 856-8929**

President: **Dwight Jefferson**

R & D Director: **Neil MacDonald**
Telephone:

Employees: **4**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Neil MacDonald

Telephone: **(604) 533-4444**

Founded: **1984**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology:) **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Financing biotechnology industry.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Aquaculture, mushroom culture.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: **Sylvan Industries Ltd.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Interested in investment inquiries and R & D projects.**

COMMENTS:

CONTACT PERSON: **Dwight Jefferson**

OTHER ACTIVITIES:

AGRIFOREST TECHNOLOGIES LTD.

HEAD OFFICE

**2330 Enterprise Way
Kelowna, British Columbia V1X 4H7**

Telephone: (604) 860-5815
Telex:
Fax:

President: **Reg Tomiye**

R & D Director: **Dr. Kamlesh R. Patel**
Telephone: (604) 860-5815

Employees: 12
R & D Employees 3
(In biotechnology: 3)

RESEARCH FACILITY

**2330 Enterprise Way
P.O. Box 178
Kelowna, British Columbia V1Y 7N5**

Manufacturing Director:
Charlotte Lawrence

Telephone: (604) 860-5815

Founded: 1984
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$100K)

PRINCIPAL ACTIVITIES: R & D in plant tissue culture and commercial micropropagation of agricultural and horticultural plants.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of protocols for micropropagation of forest trees as well as plants of agricultural and horticultural importance.

MANUFACTURING: Commercial micropropagation of fruit tree rootstocks, self-rooted fruit trees, tissue cultured roses, woody ornamentals and several greenhouse plants.

SALES/OTHER(S): Sale of the above-mentioned plants.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: AgriForest welcomes contracts from government or private enterprise to micropropagate specific plants. AgriForest is also interested in joint ventures with foreign companies in the field of plant tissue culture.

COMMENTS:

CONTACT PERSON: **Reg Tomiye**

OTHER ACTIVITIES:

AGROPUR COOPÉRATIVE AGRO-ALIMENTAIRE

HEAD OFFICE

510, rue Principale
Granby (Québec) J2G 7G2

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 375-1991
Telex: 05832510
Fax: (514) 375-2099

Manufacturing Director:
Robert Poirier, Eng.

Telephone: (514) 375-1991

President: Michel Lemire

R & D Director: Roger N. Giroux, Ph.D.
Telephone: (514) 375-1991 ext. 358

Employees: 2,500
R & D Employees: 12
(In biotechnology: 5)

Founded: 1938
Annual Sales: \$700M
R & D Expenses: \$0.5-1M
(In biotechnology: \$400K)

PRINCIPAL ACTIVITIES: Processing of milk products, especially cheese.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Lactic ferments. Proteases for cheese-making.

MANUFACTURING:

SALES/OTHER(S): Marketing of lactic ferments.

OTHER ACTIVITIES:

Purification of wastewater.
Manufacture of all other milk products and some food products.

Marketing of milk and food products.

AFFILIATIONS: La Coopérative fédérée du Québec.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exchanges of data and lactic bacteria cultures.

COMMENTS: Possible exchanges of data by mail or during meetings of the International Federation of Milk Industries.

CONTACT PERSON: Roger N. Giroux, Ph.D.

LES ALIMENTS CARRIÈRE INC.

HEAD OFFICE

**540, chemin des Patriotes
Saint-Denis sur Richelieu (Québec) J0H 1K0**

Telephone: **(514) 584-2235**
Telex: **055-60185**
Fax: **(514) 787-3537**

President: **Marcel Ostiguy**

R & D Director: **Michel Casgrain**
Telephone: **(514) 584-2235**

Employees: **100**
R & D Employees: **2**
(In Biotechnology: **Contracted out**)

RESEARCH FACILITY

**Same as Head Office and
143, rue Saint-François-Xavier
Saint-Césaire (Québec) J0H 1K0**

Manufacturing Director:
Pierre Carrière

Telephone: **(514) 584-2235**

Founded: **1987**
Annual Sales: **\$30+M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Vegetable canning and freezing. Confectionery.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Extraction of coloring additives from sugar-beet wastes. Lactic fermentation of vegetables.**

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Acidification. Controlled atmospheres.

AFFILIATIONS: **Snyder & Fils Inc., Bedford; Girard Inc., Saint-Césaire; Légubec Inc., Rougemont.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Reciprocal visits concerning new processes.**

COMMENTS:

CONTACT PERSON: **Michel Casgrain**

ALLELIX AGRICULTURE

(A Division of Allelix Inc.)

HEAD OFFICE

**6850 Goreway Drive
Mississauga, Ontario L4V 1P1**

Telephone: **(416) 677-0831**
Telex: **06-968036**
Fax: **(416) 677-9595**

Chairman: **Dr. John R. Evans, Ph.D.**
Telephone: **(416) 677-0831**

Employees: **66 plus**
R & D Employees: **60 ***
(In biotechnology: **60**)

MANUFACTURING FARM

**Alloa Farm
R.R. #4
Georgetown, Ontario L7G 4S7**

Telephone: **(416) 546-4448**

Founded: **1981 (Commenced operations in 1983)**
Annual Sales: **\$0-1M**
R & D Expenses: **\$3-5M**
(In biotechnology: **\$3-5M**)

PRINCIPAL ACTIVITIES: Improvement of plants and microorganisms for agricultural purposes using plant breeding, plant cell and molecular biology and agricultural microbiology.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Emphasis is on crop seeds (notably hybrid spring canola) and microbial inoculants. Research facilities include a 100-acre farm and over half an acre of greenhouse space.

MANUFACTURING: Seed production on leased land in Ontario and at a winter nursery in Chile.

SALES/OTHER(S): U.S.A./Canada canola launch in 1990. Microbial seed treatments as early as 1990.

AFFILIATIONS: United Grain Growers Limited - joint venture to develop and commercialize hybrid spring canola for Western Canada; Weibull AB (Volvo) - joint development and cross licensing agreement for hybrid canola sold in Europe and the Eastern Bloc; American Cyanamid - funded collaboration to develop herbicide resistant canola varieties.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Enters into joint venture agreements with companies with complementary strengths.

COMMENTS: Owned by two public companies - Canada Development Corporation (50%) and John Labatt Limited (30%) - and Ontario Development Corporation (20%).

CONTACT PERSON: Jim Castagno, Commercial Manager.

* Including 17 Ph.D.

ALLELIX BIOCHEMICALS

(A Division of Allelix Inc.)

HEAD OFFICE

**6850 Goreway Drive
Mississauga, Ontario L4V 1P1**

Telephone: (416) 677-0831
Telex: 06-968036
Fax: (416) 677-9595
President: Graham Strachan
Chairman: Dr. John R. Evans
R & D Director: Dr. Wayne Davies
Telephone: (416) 677-0831

Employees: 75 plus support

R & D Employees: 70
(In biotechnology: 70)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Dr. Nigel Smart

Founded: 1981 (Commenced operations in 1983)
Annual Sales: \$0-1M
R & D Expenses: \$5-7M
(In biotechnology: \$6-M)

PRINCIPAL ACTIVITIES: Develops pharmaceutical products focusing on therapeutic protein production via recombinant DNA technology and receptor-based drug design.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Biopharmaceuticals/human therapeutics tissue repair, anti-inflammatory, central nervous system, immunodisorder, cancer treatments.

MANUFACTURING: Proprietary fungal, yeast and plant cell fermentation systems for the production of high value chemicals, available for licensing. Proprietary systems for identifying genes that code for enzymes, vitamins, amino acids, etc., available for licensing. Pilot plant/fermentation capability.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: DDI Pharmaceuticals, human superoxide dismutase; McMaster University, therapeutics for central nervous system disorders; Mitsui Petrochemicals Inc., vincristine/vinblastine; Continental Pharma Cryosan Inc., heparinase; Hypercube Inc., software for computer-aided drug design.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Undertakes contract research in pharmaceutical and industrial enzyme production. Forms joint ventures with companies with complementary strengths.

COMMENTS: Owned by two public companies - Polysar Energy and Chemical Corporation (50%) and John Labatt Limited (30%) - and the Ontario Development Corporation (20%).

CONTACT PERSON: Graham Strachan

ALLELIX DIAGNOSTICS INC.

HEAD OFFICE

**6850 Goreway Drive
Mississauga, Ontario L4V 1P1**

Telephone: **(416) 677-0831**
Telex: **06-968036**
Fax: **(416) 677-9595**

President: **Stephen Hayter**
Chairman: **Dr. John R. Evans**
R & D Director: **Dr. Scott Winston**
Telephone: **(416) 677-0831**

Employees: **44 plus support**

R & D Employees: **36***

RESEARCH FACILITY

Same as Head Office

Commercial Director:
Jeff Greenberg

Founded: **1981 (operations
began in 1984)**
Annual Sales: **\$0-1M**
R & D Expenses: **\$1-3M**

PRINCIPAL ACTIVITIES: MAb-based diagnostic tests and kits for physician's office, home and clinical use.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Pregnancy and ovulation strep throat, sexually-transmitted diseases and cardiac markers. Combines expertise in test chemistries, test reagents (UREIASE™) and device design to develop, patent and manufacture kits. Undertakes contract research leading to joint product development.

MANUFACTURING: Diagnostic kit assembly facility planned for mid-1988 start-up.

SALES/OTHER(S): Professional pregnancy and strep throat kits launched worldwide in 1988. Canine heartworm sales worldwide

OTHER ACTIVITIES:

AFFILIATIONS: Boehringer Mannheim, distribution of UREIASE™ reagents in U.S.A. Norden - supply agreement for veterinary diagnostic reagents; Agritech - supply agreement for veterinary diagnostic reagents; University of Texas, Serex International, development and distribution of patented syphilis detection technology.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Interested in forming joint ventures with companies with complementary strengths in marketing and distribution.

COMMENTS: Owned by two public companies - Canada Development Corporation (50%) and John Labatt Limited (30%) - and the Ontario Development Corporation (20%).

CONTACT PERSON: Stephen Hayter

* Including 8 Ph.D.

ALTA GENETICS INC.

HEAD OFFICE

**Site 12, Box 12, R.R. 4
Calgary, Alberta T2M 4L4**

Telephone: (403) 239-8882
Telex: 03-821172 CGY
Fax: (403) 239-8886

President: Douglas G. Blair

R & D Director: Dr. S. Willadsen
Telephone: (403) 239-8882

Employees: 65
R & D Employees: 4
(In biotechnology: 4)

RESEARCH FACILITY

Same as Head Office

Founded: 1984
Annual Sales: \$7-10M
R & D Expenses: \$1-3M
(In biotechnology: \$2M)

PRINCIPAL ACTIVITIES: Production and marketing of livestock genetics (semen and embryos). Supplying advanced livestock reproductive technologies (including artificial insemination, embryo transfer, embryo freezing, micro-manipulation of embryos, etc.).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Long-term storage/long distance transport of embryos; cloning of embryos by blastomere separation and nuclear transplantation; embryo sexing and genetic engineering; In vitro maturation and fertilization of oocytes.

MANUFACTURING: Production of elite dairy and beef breeding stock, embryos and semen (with inventory often available from frozen gene-bank).

SALES/OTHER(S): Consultant and supplier for livestock development projects (ranging from breeder herds to "national" livestock improvement projects).

OTHER ACTIVITIES:

AFFILIATIONS: Western Breeders Service Ltd., Balzac, Alberta.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: "Contract" research projects as well as select joint venture situations.

COMMENTS:

CONTACT PERSON: T.J. Mitenko

APO DIAGNOSTICS INC.

HEAD OFFICE

**91 Esna Park Drive, Unit 2
Markham, Ontario L3R 2S2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 475-1582**
Telex: **06-986783**
Fax: **(416) 749-9578**

Manufacturing Director:
Robert Sniroh

Telephone: **(416) 475-1582**

President: **Max Marmel**

R & D Director: **James Walker**
Telephone: **(416) 475-1582**

Employees: **30**
R & D Employees: **4**

Founded: **1974**
Annual Sales: **\$3-5M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Manufacture of microbiological test kits for detecting, identifying and quantitating of bacteria in medical, dental and commercial areas.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Research and develop our own products.**

MANUFACTURING: **Manufacture.**

SALES/OTHER(S): **Market world wide through distributors.**

OTHER ACTIVITIES:

AFFILIATIONS: **Apotex Inc., 150 Signet Drive, Weston, Ontario M9L 1T9 (Parent Company).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Expansion of export markets.**

COMMENTS: **Are always interested in new products and in joint ventures.**

CONTACT PERSON: **Max Marmel, President.**

APPLIED BIO-NOMICS LTD.

HEAD OFFICE

**P.O. Box 2637
Sidney, British Columbia V8L 4C1**

Telephone: (604) 656-2123
Telex:
Fax:

President: **Donald Elliott**

R & D Director: **Dr. Linda Gilkeson**
Telephone: **(604) 656-2123**

Employees: **13**
R & D Employees: **10**
(In biotechnology: **10**)

Founded: **1981**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0.5M**
(In biotechnology: **\$0.5M**)

PRINCIPAL ACTIVITIES: **R & D of biological control agents for crop protection.**

RESEARCH FACILITY

**c/o Agriculture Canada
8801 East Saanich Road
Sidney, British Columbia**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Spidermite predators - whitefly parasites. Aphid predators, thrips predators, pesticide resistant races and cold storage.**

MANUFACTURING:

SALES/OTHER(S): **Sales of experimental production of above.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Exchange of pesticide resistant races.
Exchange of exotic host parasites and predators.**

COMMENTS:

CONTACT PERSON: **Dr. Linda Gilkeson**

OTHER ACTIVITIES:

AQUA HEALTH LTD.

HEAD OFFICE

**West Royalty Industrial Park
Charlottetown, Prince Edward Island C1E 1B0**

Telephone: (902) 566-4966
Telex: 014-44109
Fax: (902) 566-4030

President: **W.D. Paterson**

R & D Director: **W.D. Paterson**
Telephone: (416) 936-2559

Employees: 8
R & D Employees: 4
(In biotechnology: 4)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
D. Airdrie

Telephone: (902) 566-4966

Founded: 1984
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: Development, production and sale of fish vaccines.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development and licensing of new fish vaccines. Immersion lobster vaccine, KD vaccine, Hitra vaccine.

MANUFACTURING: Production of fish vaccines and other veterinary bacterins. Furogen, Ermogen, Furogen b, Vibrogen and Gaffogen.

SALES/OTHER(S): Aquaculture health consulting. Technology transfer.

OTHER ACTIVITIES:

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Aqua Health seeks cooperators to develop new veterinary vaccines and our modern fermentation facility is available for bacterin production.

COMMENTS:

CONTACT PERSON: **W.D. Paterson, R.R. 1, Loretto, Ontario L0G 1L0.**

AQUARESEARCH LTD. / AQUARECHERCHE LTÉE

HEAD OFFICE

C.P. 208
North Hatley (Québec) J0B 2C0

RESEARCH FACILITY

Same as Head Office

Telephone: **(819) 842-2890**

Telex:

Fax: **(819) 842-2902**

President: **M.-C. Cantin**

R & D Director: **K.F. Ehrlich, Ph.D.**

Telephone: **(819) 842-2890**

Employees: **7**

R & D Employees: **3**

Founded: **1984**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Water management: aquaculture, industrial and municipal wastewater, lake restoration.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Wastewater purification, nitrification, algae control.**

MANUFACTURING:

SALES/OTHER(S): **Biotechnological products and services.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Research project(s) with Fisheries and Oceans Canada.**

COMMENTS:

CONTACT PERSON: **K.F. Ehrlich, Ph.D.**

OTHER ACTIVITIES:

Culture cool and warm water fishes. Spawning control.

Aquacultural products.

AQUATERRE INC.

HEAD OFFICE

2065, boulevard Charest ouest, #119
Sainte-Foy (Québec) G1C 2G1

RESEARCH FACILITY

Same as Head Office

Telephone: (418) 681-6931

Telex:

Fax:

(418) 681-7806

President:

Marc Gagnon

R & D Director:

Alain Andersen

Telephone:

(418) 681-6931

Employees:

7

R & D Employees:

2

Manufacturing Director:

Yves Lavoie

Telephone: (418) 722-0202

Founded:

1983

Annual Sales:

\$0-1M

R & D Expenses:

\$0-0.5M

PRINCIPAL ACTIVITIES: Beneficiation of the marine biomass.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Composting of sea wrack. Ensil-
ing of sea wrack. Extracts from seaweeds.

MANUFACTURING: Composting of sea wrack. Extracts from
seaweeds.

SALES/OTHER(S): Composting of sea wrack. Extracts from
seaweeds.

AFFILIATIONS: Biorex Groupe Consell Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Distribution of technologies.

COMMENTS:

CONTACT PERSON: Alain Andersen

B2 ENTERPRISES LTD.

HEAD OFFICE

P.O. Box 185
Choceland, Saskatchewan S0J 0M0

RESEARCH FACILITY

Same as Head Office

Telephone: **(306) 428-2192**

Telex:

Fax:

Manufacturing Director:

Lloyd Bartlett

Telephone: **(306) 428-2192**

President: **Lloyd Bartlett**

R & D Director:

Telephone:

Employees: **10**

R & D Employees: **1**

(In biotechnology: **2 on contract**)

Founded:

1986

Annual Sales:

\$0-1M

R & D Expenses:

\$0-0.5M

(In biotechnology: **\$200K**)

PRINCIPAL ACTIVITIES: Growth regulator extractions from bark saw dust, peat moss, soil-less mixtures, and peat flour.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Growth regulators.**

MANUFACTURING: **Extracts and peat flour.**

SALES/OTHER(S): **Soilless mixtures.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **G.L. Bartlett**

BALCO CANFOR REFORESTATION CENTRE LTD.

HEAD OFFICE

R.R. #3

Kamloops, British Columbia V2C 5K1

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 578-7212**

Telex:

Fax: **(604) 578-8655**

President: **J.A. Thorlakson**

Manager: **Gary Castonguay**

R & D Director: **Gary Hunt**

Telephone: **(604) 578-7212**

Employees: **5**

R & D Employees: **2**

(In biotechnology: **1**)

Founded: **1982**

Annual Sales: **\$1-3M**

R & D Expenses: **\$0-0.5M**

(In biotechnology: **\$200K**)

PRINCIPAL ACTIVITIES: Growing forest seedlings.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Improving quality of seedlings in container nurseries and improving growth and survival after planting by use of biofertilizers and growth regulators.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: B.C. Ministry of Forests and Lands.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Gary Hunt, Research Scientist.

BAY D'ESPOIR SALMON HATCHERY LTD.

HEAD OFFICE

St. Alban's Development Association
St. Alban's, Newfoundland A0H 2E0

RESEARCH FACILITY

via Head Office

Telephone: (709) 538-3238

Telex:

Fax:

Development Officer: Juanita Organ

R & D Director: Dr. Arnold Sutterlin

Telephone: (709) 882-2738

Employees: 10

R & D Employees: 2

(In biotechnology: 2)

Founded:

1988

Annual Sales:

\$0-1M

R & D Expenses:

\$0-0.5M

(In biotechnology:

\$50K)

PRINCIPAL ACTIVITIES: Commercial salmon hatchery.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Salmonid aquaculture; chromosome set manipulation; hybridization; sex control and sterilization; steroid enhancement of growth.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Contract work with National Research Council and Fisheries and Oceans, Canada.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

B.C. RESEARCH CORPORATION

HEAD OFFICE

**3650 Wesbrook Mall
Vancouver, British Columbia V6S 2L2**

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 224-4331
Telex: 04-507748
Fax: (604) 224-0540

President: **Dr. Terry Howard**

R & D Director: **Dr. Doug Duncan**
Telephone: (604) 224-4331

Employees: **135**
R & D Employees: **100**

Founded: **April 1988**
Annual Sales: **\$7-10M**
R & D Expenses: **\$7-10M**

PRINCIPAL ACTIVITIES: R & D contracts, technical services.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fish disease screening and diagnostic techniques. Waste management: anaerobic/aerobic digestion, composting technologies. Mineral leaching. Forest biotechnology: cloning technology.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: We sell contracts (R & D) to anyone who is willing to hire us.

COMMENTS:

CONTACT PERSONS: Aquaculture: E. Lee; Waste management: A. Birkbeck; Mineral leaching: Dr. R. McElroy; Forestry: Dr. Paul Webb (Cloning technology).

BEAK CONSULTANTS LTD.

HEAD OFFICE

14 Abacus Road
Brampton, Ontario L6T 5B7

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 458-4044

Telex:

Fax: (416) 458-7303

President:

R & D Director: Dr. D. Lush

Telephone: (416) 458-4044

Employees: 200

R & D Employees: 25

Founded: 1955

Annual Sales: \$10-15M

R & D Expenses: \$0.5-1M

PRINCIPAL ACTIVITIES: Regulatory policies. Environmental protection.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Pollution control: Industrial waste treatment, sludge and mill-tailing management-aerobic/anaerobic. Risk-impact assessment development protocol: microcosm test systems.

MANUFACTURING:

SALES/OTHER(S): Consulting: bio-process design; bioassay services.

OTHER ACTIVITIES:

Environmental research; contaminant pathways, fisheries research; bio-assay and mutagenicity R & D; environmental modelling; natural systems management; regulatory control.

Consulting: impact assessment; commercial laboratory; engineering.

AFFILIATIONS: Beak Consultants Inc.; Beak consultants Associates Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint ventures; contract agreements.

COMMENTS: Offices in Canada and the U.S.

CONTACT PERSON: Dr. D. Lush

BETTER YIELD INSECTS

HEAD OFFICE

**P.O. Box 3451, Tecumseh Station
Windsor, Ontario N8N 3C4**

RESEARCH FACILITY

**1302 Highway #2
Emeryville, Ontario N0R 1C0**

Telephone: **(519) 727-6108**

Telex:

Fax: **(519) 727-5989**

President: **P. Coristine**

R & D Director: **P. Coristine**

Telephone: **(519) 727-6108**

Employees: **6**

R & D Employees: **3**

(In biotechnology: **3**)

Founded: **1977**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Rearing, marketing beneficial insects and mass producing insects.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Rearing, mass producing and integration of insects to pesticides. Spider mite predators, white fly parasites, aphid predators, thrip predators.

MANUFACTURING: Beneficial insects.

SALES/OTHER(S): Rear 4 beneficial insects. Sell insect traps - attract insects by colour (sticky insect strips).

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Insects replace pesticides at a much lower cost, with much higher plant yields - no toxicity. Greenhouse workers prefer to use insects rather than toxic chemicals to control pests due to the reduced safety risks.

CONTACT PERSON:

OTHER ACTIVITIES:

IAF BIOCHEM INTERNATIONAL INC.

HEAD OFFICE

**531, boulevard des Prairies
Laval (Québec) H7B 1V7**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 687-4910**
Telex: **055-60466IAF BCM VDL**
Fax: **(514) 687-3521**

Manufacturing Director:
Tom Louridas

Telephone: **(514) 687-4910**

President: **Francesco Bellini**

R & D Director: **Gervais Dionne**
Telephone: **(514) 687-4910**

Employees: **45**
R & D Employees: **26**
(In Biotechnology: **26**)

Founded: **1986**
Annual Sales: **\$1.4M**
R & D Expenses: **\$2.6M**
(In Biotechnology: **\$2.6M**)

PRINCIPAL ACTIVITIES: **Manufacture of chemical specialties, diagnostics and R & D on diagnostic tests, vaccines and drugs.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Diagnostic tests; vaccines; drugs; health care products for people and animals.**

MANUFACTURING: **Chemical specialties and diagnostics tests. Health care products for people and animals.**

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Institut Armand Frappier.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Licensing agreements for marketing our products in foreign countries and for marketing foreign products in Canada. R & D agreements.**

COMMENTS:

CONTACT PERSON: **Francois Legault, Treasurer.**

BIO FIELD TECHNOLOGIES RESEARCH INC. *

<u>HEAD OFFICE</u> 1311-50th O'Connor Street Ottawa, Ontario K1P 8L2		<u>RESEARCH FACILITY</u> 	
Telephone: (613) 563-8105 Telex: Fax:		Manufacturing Director: David Grayson	
President: David Grayson			
R & D Director: David Grayson Telephone:			
Employees: 3 R & D Employees: 3		Founded: 1984 Annual Sales: \$0-1M R & D Expenses: \$0-0.5M	
PRINCIPAL ACTIVITIES: R & D on microscopic algae for soil and crop improvement; seaweed extract used as a foliar spray and seed treatment for crop improvement.			
BIOTECHNOLOGY ACTIVITIES:		OTHER ACTIVITIES:	
<u>RESEARCH & DEVELOPMENT:</u> Algae strain selection and modification; effect of algae on soil properties and crop yields. Effect of seaweed extract on crop yield.			
<u>MANUFACTURING:</u> Algae for green manure crops for agricultural land.			
<u>SALES/OTHER(S):</u> Sale of product, MICROP (micro-algae) and BOOST (seaweed extract).			
<u>AFFILIATIONS:</u>			
<u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> Marketing and Research assistance. Licencing of similar technologies for Canada and North America.			
<u>COMMENTS:</u>			
<u>CONTACT PERSON:</u> David Grayson			

* Formerly: Northern Soil Technologies Ltd.

BIOGÉNIE S.R.D.C. INC.

HEAD OFFICE

**4700, boulevard Wilfrid Hamel
Bureau 302
Québec (Québec) G1P 2J9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(418) 877-1348**
Telex:
Fax:

President: **Benoit Cyr**

R & D Director: **Jean-Luc Sansregret**
Telephone: **(418) 877-1349**

Employees: **6**
R & D Employees: **3**
(In biotechnology: **2**)

Founded: **1986**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Industrial waste treatment; depollution of contaminated soils.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Waste treatment. Systems development. Thick foam bioreactors for the treatment of heavily-loaded effluents.**

MANUFACTURING:

SALES/OTHER(S): **Biodegradation of soil contaminants. Management plan for industrial wastewaters (pulp and paper plants).**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Exchanges of information with research institutes or private companies concerning technology transfers.**

COMMENTS:

CONTACT PERSON: **Jean-Luc Sansregret**

OTHER ACTIVITIES:

Physical/chemical process for the treatment of contaminated soils.

Design of systems for the recovery of wastewater sludges.

BIO-HOL DEVELOPMENTS *

<u>HEAD OFFICE</u>		<u>PILOT PLANT</u>
Weston Research Centre 1047 Yonge Street Toronto, Ontario M4W 2L2	St. Lawrence Reactors Limited 50 Elmwood Avenue S. Mississauga, Ontario L5G 3J7	11 Vanley Crescent Toronto, Ontario M3J 2B7
Telephone: (416) 922-5100 (416) 271-1100 Telex: Fax: (416) 922-4318 (416) 271-8929		Manager : Mr. Dave Whiting Telephone: (416) 638-7088
President:		
R & D Directors: Ross Lawford, Ph.D.; Per Assarsson, Ph.D. Telephone:		
Employees: 6 R & D Employees: 5	Founded: 1981 Annual Sales: N/A R & D Expenses: \$0-0.5M	
PRINCIPAL ACTIVITIES: R & D in biomass utilization.		
BIOTECHNOLOGY ACTIVITIES: <u>RESEARCH & DEVELOPMENT:</u> Production of value-added products from ligno-cellulosics. Lignocellulose hydrolysis. Fermentation of pentoses and hexoses. Development of <u>Zymomonas mobilis</u> fermentation technology. <u>MANUFACTURING:</u> <u>SALES/OTHER(S):</u> Contract small fermentations and re-search.		OTHER ACTIVITIES:
AFFILIATIONS: Weston Research Centre is a division of George Weston Limited. St. Lawrence Reactors is a subsidiary of St. Lawrence Starch Limited.		
FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Interest in co-operative research and development projects; marketing and licensing of Bio-Hol technology.		
<u>COMMENTS:</u>		
CONTACT PERSONS: Dr. Ross Lawford, Weston Research Centre; Dr. Per Assarsson, St. Lawrence Reactors Limited		

* Joint Venture: Weston Research Centre; St. Lawrence Reactors Limited.

BIO-MÉGA INC.

HEAD OFFICE

**2100, rue Cunard
Laval (Québec) H7S 2G5**

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 882-4640
Telex: 055-60073
Fax: (514) 882-8434

President and General Manager: Jacques Gauthier

R & D Director: **Yvan Guindon, Ph.D.**
Telephone: (514) 882-4640

Employees:	85	Founded:	1984
R & D Employees:	75	Annual Sales:	\$500K
		R & D Expenses:	\$7-10M

PRINCIPAL ACTIVITIES: Laboratories of pharmaceutical, diagnostic and biotechnological research.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fermentations. Enzymatic processes. Cardiovascular drugs: ANF analogs*; inhibitors of the renin angiotensin-aldosterone cascade. Topical agents: antiviral drugs against HSV-I, II.**

MANUFACTURING:

SALES/OTHER(S): In microbiology: Strep A, Chlamidia trachomatis.

AFFILIATIONS: Le Groupe SGF (Société générale de financement du Québec).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Corporate partnerships (licencing-in).

COMMENTS:

CONTACT PERSON: Jacques Gauthier

OTHER ACTIVITIES:

Peptidic hormones: ANF, GRF, calcitonin, LNRH; leukotrienes.

Peptidic hormones, resins, protected amino-acids and customized production of peptides.

* In cooperation with Institut de recherches cliniques de Montréal.

** In cooperation with Hôpital Notre-Dame de Montréal and Institut du cancer de Montréal.

BIOMIRA INC.

HEAD OFFICE

**9411A-20th Avenue
Edmonton, Alberta T6N 1E5**

Telephone: **(403) 450-3761**
Telex: **961000**
Fax: **(403) 463-0871**

President: **Gordon J. Politeski**

R & D Director, Immunology: **Mike Longenecker Ph.D.**

R & D Director, Chemistry: **Tony Noujaim, Ph.D.**

Telephone:

Employees: **50**
R & D Employees: **40**
(In biotechnology: **40**)

Founded: **1985**
Annual Sales: **\$0-1M**
R & D Expenses: **\$3-5M**
(In biotechnology: **\$4.5M**)

PRINCIPAL ACTIVITIES: Cancer diagnosis and therapy using synthetic tumor associated glycoconjugates and monoclonal antibodies.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Cancer diagnostic and therapeutic products - in vitro kits, radio-immuno imaging and radio-immuno therapy products.

MANUFACTURING: Cancer diagnostic and therapeutic products - in vitro kits, radio-immuno imaging and radio-immuno therapy products.

SALES/OTHER(S): Direct sales in North America, distributors in other countries.

AFFILIATIONS: U. of Alberta, Miles Pharmaceuticals.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Collaborative arrangements with major international cancer researchers and major pharmaceutical and biotech companies with complementary proprietary technologies. Marketing and distribution partners - licencing in or licencing out cancer-related products.

COMMENTS:

CONTACT PERSON: G.J. Politeski, President.

RESEARCH FACILITY

Same as Head Office

OTHER ACTIVITIES:

BIONOV CNP INC.

HEAD OFFICE

**81, rue St-Pierre, 4^e étage
Québec (Québec) G1K 4A3**

RESEARCH FACILITY

Telephone: **(418) 692-1357**
Telex:
Fax:

President: **Yvan Pouliot**

R & D Director: **Brigitte LeBreton, Ph. D.**
Telephone:

Employees:	2	Founded:	1985
R & D Employees:	1	Annual Sales:	\$0-1M
(In biotechnology: 1)		R & D Expenses:	\$0-0.5M
		(In biotechnology: \$0-0.5M)	

PRINCIPAL ACTIVITIES: Carrying out studies and R & D on bioprocessing of pollutants and biomass production.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Cultivation of micro-algae for the processing and beneficiation of wastewater and pig manure.

MANUFACTURING: Production of biomass for processing into food (being developed).

SALES/OTHER(S): Consultations.

.OTHER ACTIVITIES:

Exploitation of specific sea resources (being developed).

Consultations in biology.

AFFILIATIONS: The company's scientific authority is Joël de la Noüe, General Manager of GRERESA (Laval University).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: We are looking for a partner for financing the development of processes.

COMMENTS:

CONTACT PERSON: Yvan Pouliot

BIOPROTEIN CANADA INC.
(Division of Protein Foods Group Inc.)

HEAD OFFICE

**154 Main Street East
P.O. Box 463, Station B
Hamilton, Ontario L8L 7W9**

Telephone: **(416) 522-9214**
Telex: **061-8343**
Fax: **(416) 522-6647**

President: **Robert Yarem**
R & D Director: **Dr. C.J. Findlay**
Telephone: **(416) 522-9214**

Employees: **6**
R & D Employees: **6**
(In biotechnology: **4**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Dr. C.J. Findlay

Telephone: **(416) 522-9214**

Founded: **1984**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$250K**)

PRINCIPAL ACTIVITIES: **Research into immobilized systems using BIOBONE™ clear granular bone.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Immobilization of proteolytic enzymes for cheddar cheese production. Immobilized bacteria for wastewater treatment.**

MANUFACTURING: **Production of BIOBONE™ from residue of chicken deboning.**

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Protein Foods Group Inc. (Parent Company).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint Venture, license arrangement, cooperative research.**

COMMENTS:

CONTACT PERSON: **Dr. C.J. Findlay**

BIOQUEST INTERNATIONAL, INC.

<u>HEAD OFFICE</u>		<u>RESEARCH FACILITY</u>	
#3-1329 Niakwa Road East Winnipeg, Manitoba R2J 3T4		Same as Head Office	
Telephone:	(204) 254-0712	Manufacturing Director:	
Telex:		Ms. Hortencia Acosta	
Fax:		Telephone: (204) 254-0712	
President:	Martin Samoiloff, Ph.D.		
R & D Director:	Martin Samoiloff, Ph.D.		
Telephone:	(204) 254-0712		
Employees:	12	Founded:	1983
R & D Employees:	6	Annual Sales:	\$0-1M
(In biotechnology: 6)		R & D Expenses:	\$0-0.5M
		(In biotechnology: \$0-0.5M)	
PRINCIPAL ACTIVITIES: Development of biomonitoring systems, toxicity assessment, evaluation of workplace and residential air quality. Research in detoxification systems.			
<u>BIOTECHNOLOGY ACTIVITIES:</u>		<u>OTHER ACTIVITIES:</u>	
<u>RESEARCH & DEVELOPMENT:</u> New bioassay systems.		Evaluation of conventional bioassay.	
<u>MANUFACTURING:</u> Organisms for air quality evaluation.		Air sampling systems.	
<u>SALES/OTHER(S):</u>			
<u>AFFILIATIONS:</u> None at present, contemplating acquisition by International Falcon Resources.			
<u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> Need for capital, marketing expertise.			
<u>COMMENTS:</u>			
<u>CONTACT PERSON:</u> Martin Samoiloff, Ph.D.			

BIO-RESEARCH LABORATORIES

HEAD OFFICE

**87, rue Senneville
Senneville, Montréal (Québec) H9X 3R3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 457-2280**
Telex: **05-821582**
Fax: **(514) 457-3883**

President: **M.F. Ankeorn**

R & D Director: **Dr. Reid Jilek**
Telephone: **(514) 457-2280**

Employees: **500**
R & D Employees: **N/A**

Founded: **1965**
Annual Sales: **\$15-30M**
R & D Expenses: **\$10+M**

PRINCIPAL ACTIVITIES: Clinical and preclinical research on a contract basis for pharmaceutical, chemical, pesticide and biotechnology companies.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: On a contract basis on hormones immunomodulators, thrombolytic agents, monoclonal antibodies.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Connaught Biosciences, Inc. (Parent Company).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **To introduce the services Bio-Research has to offer to biotech companies to aid in their product development.**

COMMENTS:

CONTACT PERSONS: **Dr. Reid Jilek, Vice-President Marketing; Winn Brink, Director, Marketing Services.**

BIO-RESPONSE SYSTEMS LTD.

HEAD OFFICE

**P.O. Box 2564, Station M
Halifax, Nova Scotia B3J 3N5**

RESEARCH FACILITY

Same as Head Office

Telephone: **(902) 477-0155**
Telex: **N/A**
Fax: **N/A**

Manufacturing Director:
Michael Scott

Telephone: **(902) 477-0155**

President: **Richard Thomas, Ph.D.**

R & D Director: **Torgny Vigerstad, Ph.D.**
Telephone: **(301) 320-5790**

Employees: **3**
R & D Employees: **part time**

Founded: **1987**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Importation and distribution of toxicity testing systems using genetically engineered bacteria.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Testing of appropriate methods and applications.**

MANUFACTURING: **None yet.**

SALES/OTHER(S): **Distribution in U.S.A. and Canada of toxicity testing systems.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Market Development Assistance; Development of manufacturing methods appropriate to this technology.**

COMMENTS:

CONTACT PERSON: **Michael Scott, Tel.: (902) 477-0155.**

OTHER ACTIVITIES:

BIOREX GROUPE CONSEIL INC.

HEAD OFFICE

**2065, boulevard Charest ouest, Suite 119
Sainte-Foy (Québec) G1N 2G1**

Telephone: **(418) 681-6931**

Telex:

Fax: **(418) 681-7806**

President: **Christian J. Jacques**

R & D Vice-President: **Marc Gagnon**

Telephone: **(418) 681-6931**

Employees: **75**

R & D Employees: **7**

(In biotechnology: **7**)

RESEARCH FACILITY

Same as Head Office

Vice-President, Manufacturing:

Alain Andersen

Telephone: **(418) 681-6931**

Founded: **1978**

Annual Sales: **\$3-5M**

R & D Expenses: **\$0.5-1M**

(In biotechnology: **\$450K**)

PRINCIPAL ACTIVITIES: R & D, production and consulting on aquaculture, marine biotechnology and fisheries. Turnkey aquaculture projects.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: All-female, sterile or hybrid stocks of Salmonidae. Composting and ensiling of marine wrack. Mussel breeding.

MANUFACTURING: Wrack compost and fertilizers. Extracts from seaweeds. Aquaculture (Salmonidae, shellfish).

SALES/OTHER(S): Fertilizers and composts. Consulting on aquaculture. R & D on aquaculture.

OTHER ACTIVITIES:

Computer systems for aquaculture. New sea products.

Pisciculture (shrimps, mussels, Salmonidae).

Shrimps, smoked trouts and roe. Consulting on fisheries and aquaculture.

AFFILIATIONS: Le Groupe ACSI Ltd.; Pisciculture des Alléghanys Inc.; Aquaterre Inc.; Criadero de Camarones de Chones S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Alone or in a consortium.

COMMENTS:

CONTACT PERSON: **Marc Gagnon, Vice-President, Consulting and Research.**

BIOSCAN CONTINENTAL INC.

HEAD OFFICE

**350, boulevard Industriel, Suite 201 (2nd Floor)
St-Eustache (Québec) J7R 5V3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 491-5807**
Telex: **05-25134-MTL BIO**
Fax: **(514) 491-3069**
Cable: **BIOMNI-Montréal-Canada**
President: **G. Banik**

Manufacturing Director:
Christian Chabot

Telephone: **(514) 491-5807**

R & D Director: **Dr. U.K. Banik**
Telephone: **(514) 491-5807**

Employees: **6**
R & D Employees: **2**

Founded: **1981**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: R & D health care products. Please see our brochure and information sheets.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Carcinoembryonic antigen (CEA) and hormones.**

MANUFACTURING: **CEA and hormones.**

SALES/OTHER(S): **CEA, hormones, and consumer products.**

AFFILIATIONS: **135952 Canada Inc. (holding company).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **We are searching for companies to effectively commercialize our products.**

COMMENTS: **If properly marketed our products would be appreciated worldwide.**

CONTACT PERSON: **Dr. U.K. Banik, Vice President and Director of R & D.**

OTHER ACTIVITIES:

Consumer products:

**Oradent^(R)
Panacil^(R)
Restorin^(R)**

BIOSTAR INC.

HEAD OFFICE

**Box 1000, Sub P.O. #6
Saskatoon, Saskatchewan S7N 0W0**

RESEARCH FACILITY

Same as Head Office

Telephone: (306) 966-7473
Telex: 074-2659
Fax: (306) 966-7478

President: **Stephen D. Acres**

R & D Director: **Lorne A. Babiuk**
Telephone: (306) 966-7473

Employees: **7**
R & D Employees: **6**
(In biotechnology: **3**)

Founded: **1983**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0.5M**)

PRINCIPAL ACTIVITIES: Development and testing of animal health-care products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development and testing of vaccines, monoclonal antibodies, diagnostic procedures, immunoregulators and other human and animal health-care products.

MANUFACTURING:

SALES/OTHER(S): Technology.

OTHER ACTIVITIES:

AFFILIATIONS: Veterinary Infectious Disease Organization, University of Saskatchewan.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint development of animal health-care products. BIOSTAR will license-out discoveries which have application to human health care.

COMMENTS:

CONTACT PERSON: **Stephen D. Acres, President.**

BIOSYN

HEAD OFFICE

**1080, Côte Beaver Hall, Suite 1806
Montréal (Québec) H2Z 1S8**

Telephone: **(514) 875-6434**
Telex: **055-611-39**
Fax: **(514) 861-6303**

President: **Guy Gravel**

R & D Director: **Guy Gravel**
Telephone: **(514) 875-6434**

Employees: **21**
R & D Employees: **15**

(In biotechnology: **6**)

RESEARCH FACILITY

**51, rue du Moulin
Saint-Juste-de-Bretenières
Comté de Montmagny (Québec)
G0R 3H0**

Founded: **1980**
Annual Sales: **N/A**
R & D Expenses: **\$10+M varies, depending
on contracts.**
(In biotechnology: **\$8M**)

**PRINCIPAL ACTIVITIES: Development of a biomass gasification process for the production
of a synthetic gas.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Biomass gasification.**

MANUFACTURING: **Production of a synthesis gas by gasifica-
tion of biomass residues, in view of ultimate conversion into
liquid methanol or other petrochemicals, or for production
of electricity by gas turbines or diesel engines in case of
air gasification.**

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **A Division of Groupe Nouveler Inc., Montréal.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: **Cooperation with Federal Department of Energy, Mines and Resources; National
Research Council and Institut de recherches énergétiques d'Hydro-Québec, and with 3
Canadian universities.**

CONTACT PERSON: **Guy Gravel**

BIOSYSTech CONSULTING INC.

HEAD OFFICE

**2383 Edenhurst Drive
Mississauga, Ontario L5A 2L1**

Telephone: (416) 279-5337
Telex:
Fax:

President: Dr. Hugh G. Lawford
R & D Director: Dr. Hugh G. Lawford
Telephone: (416) 978-7096

Employees: 4

R & D Employees: 1
(In biotechnology: 1)

RESEARCH FACILITY

**University of Toronto
Department of Biochemistry**

Founded: Registered in 1980 -
Incorporated in 1983
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$8-10K, 1986-87)

PRINCIPAL ACTIVITIES: Consulting in the area of bio-systems technologies/bio-engineering/fermentation technologies/enzyme and microbial processes (health care products/foods/lactic cultures/fuel alcohol).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Consulting in the area of bio-systems technologies/bio-engineering/fermentation technologies/enzyme and microbial processes (health care products/foods/lactic cultures/fuel alcohol).

MANUFACTURING:

SALES/OTHER(S): Lease equipment.

OTHER ACTIVITIES:

AFFILIATIONS: Fermtex R & D Inc. (Mississauga); Agferm Products Inc. (Mississauga).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Dr. Hugh Lawford

BIOTECHNICA CANADA INC.

HEAD OFFICE

**#170-6815-8 Street North East
Calgary, Alberta T2E 7H7**

RESEARCH FACILITY

Same as Head Office

Telephone: **(403) 295-0383**

Telex:

Fax: **(403) 295-0386**

President: **Gordon A. Wells**

R & D Director: **W. R. Scowcroft**

Telephone:

Employees: **34**

R & D Employees: **22**

Founded: **1985**

Annual Sales: **\$0-1M**

R & D Expenses: **\$3-5M**

PRINCIPAL ACTIVITIES: R & D in oilseeds, cereals, forages, horticulture and forestry.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Plant breeding: tissue culture, biochemistry, molecular biology, microbiology. Crop protection in forestry and agriculture: herbicides.

MANUFACTURING:

SALES/OTHER(S): **Products: super sile, super hay.**

OTHER ACTIVITIES:

AFFILIATIONS: Biotechnica International, Inc., 85 Bolton Street, Cambridge, MA. 02140; Biotechnica Limited, 5 Chiltern Close, Llanishen, Cardiff, Wales CF4 5DL; Biotechnica Limited/North America, 17 Dunster Street, #208, Cambridge, MA. 02138.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

BLUEBERRY ACRES LIMITED

HEAD OFFICE

R.R. #2
Centreville, Nova Scotia B0P 1J0

RESEARCH FACILITY

Plant Tissue Culture Laboratory

Telephone: **(902) 582-3832**
 Telex:
 Fax: **(902) 582-7755**

Laboratory Manager:
Jennifer Smith

President: **Robert P. Aucoin**

R & D Director:
 Telephone:

Employees: **40 ***
 R & D Employees: **2**

Founded: **1974**
 Annual Sales: **\$850K**
 R & D Expenses: **\$300K**

PRINCIPAL ACTIVITIES: Nursery and Highbush Blueberry Farming.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Plant tissue culture laboratory.
 Wide range of ornamentals, apples, pears, small berry
 plants, foliage and flowers.

MANUFACTURING: Plants from tissue culture lab.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Some research is subcontracted to university researchers.

CONTACT PERSON:

OTHER ACTIVITIES:

**Fresh and frozen blueberries
 and raspberries, shipped and
 marketed.**

**Fresh Highbush blueberries
 and cultivated raspberries,
 90% of which are shipped to
 Boston.**

* Staff increases to 650 during picking season.

BOCKNEK LTD.

HEAD OFFICE

**165 Bethridge Road
Rexdale, Ontario M9W 1N4**

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 745-0796
Telex: 06-989319
Fax: (416) 745-8843

Manufacturing Director:
Paul Haffenden

Telephone: (416) 745-0796

President: **Zelik L. Bocknek**

R & D Director: **Dr. Adolf V. Seefried**
Telephone: (416) 745-0796

Employees: 27
R & D Employees: 2

Founded: 1973
Annual Sales: \$7-10M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Manufacturer of tissue culture products (sera and media).

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of serum substitutes.

MANUFACTURING:

SALES/OTHER(S): World Distribution through agents to Europe, Japan, U.S.A., U.K., Canada.

By-product sales - pancreas, rennets.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint venture for development of serum free media and cell growth factors. Extraction technology using animal glands, organs, etc.

COMMENTS:

CONTACT PERSON: **Paul Haffenden**

BOOJUM RESEARCH LTD.

HEAD OFFICE

**21 Dundas Square
Suite 405
Toronto, Ontario M5B 1B7**

RESEARCH FACILITY

Telephone: **(416) 861-1088**

Telex:

Fax:

President: **M. Kalin**

R & D Director: **M. Kalin**

Telephone:

Employees: **5**

R & D Employees: **5**

(In biotechnology: **5**)

Founded: **1984**

Annual Sales: **N/A**

R & D Expenses: **\$0-0.5M**

(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: R & D of wastewater treatment in mining industry, AMD and close-out. Carried out on site.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Developing biological methods to address acid mine drainage problems for close-out of waste management areas for hard rock and coal mines. Biological polishing methods using *Chara* species, are being developed for extreme alkaline wastewaters to provide improvement in treated effluents during operations and to economize on treatment costs in general.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: Cangene Ltd., Dearborn.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

BROOKSIDE FARMS LTD.

HEAD OFFICE

**31212 Peardonville Road
Abbotsford, British Columbia V2S 5W6**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 534-8596**
Telex: **04-363512**
Fax: **(604) 852-8751**

Manufacturing Director:
Don Westendorp

Telephone: **(604) 534-8596**

President: **J. Hugh Wiebe**

R & D Director: **Stephen R. Smith**
Telephone:

Employees: **50**
R & D Employees: **4**
(In biotechnology: **4**)

Founded: **1956**
Annual Sales: **\$7-10M**
R & D Expenses: **\$0.5M**
(In biotechnology: **\$0.5M**)

PRINCIPAL ACTIVITIES: Food confectionary; biochemicals.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Research on extractability of potentially profitable biochemicals.

MANUFACTURING: Extraction, isolation and purification of biochemicals.

SALES/OTHER(S): Environmental and agricultural testing.

AFFILIATIONS: Canadian Lysozyme, Inc.; Brookside Laboratories, Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Will contract out our research capabilities. Can do bioprocessing or downstream protein purification.

COMMENTS:

CONTACT PERSON: **Stephen R. Smith**

CANADIAN BIOCLINICAL

HEAD OFFICE

**81 Finchdene Square
Scarborough, Ontario M1X 1B4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 293-4955**
Telex: **065-25422**
Fax: **(416) 293-2492**

Manufacturing Director:
Dr. D. Segal

President: **Dr. J. Clapp**

R & D Director: **Dr. Clapp**
Telephone: **(416) 293-4955**

Employees: **15**
R & D Employees: **3**
(In biotechnology: **3**)

Founded: **1975**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Diagnostic kit manufacture. Purification of proteins.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Diagnostic kits; protein purification (human and animal) antibody assay and analysis for private drug company.**

MANUFACTURING: **EIA's, ELISA. RIA's, IRMA.**

SALES/OTHER(S):

AFFILIATIONS: **Joldon; Helix; De Rose Biologicals.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Willing to consider distribution of other products in Canada and joint venture for new products.**

COMMENTS:

CONTACT PERSON: **Dr. J. Clapp**

OTHER ACTIVITIES:

THE CANADIAN LIPOSOME CO. LTD.

HEAD OFFICE

#308-267 West Esplanade
North Vancouver, British Colombia V7M 1A5

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 988-5400

Telex:

Fax: (604) 988-0362

President: Edward T. Mertz

R & D Director: Dr. Pieter R. Cullis

Telephone: (604) 988-5400

Employees: 9

R & D Employees: 9

(In biotechnology: 9)

Founded: 1987

Annual Sales: \$0-1M

R & D Expenses: \$1-3M

(In biotechnology: \$1-3M)

PRINCIPAL ACTIVITIES: R & D: pharmaceuticals, liposomes.

BIOTECHNOLOGY ACTIVITIES: Health Care

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Use of liposomes with certain pharmaceuticals to increase efficacy, and reduce toxicity. Scope from initial formulations to animal studies.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: The Liposome Company, Inc., Princeton, New Jersey.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exploration of concurrent effort to reduce drug toxicity, prolong therapeutic dosage, and targeting to diseased tissue.

COMMENTS: Discussion desired of models and procedures used in animal studies to evaluate impact/presence of drug in animal systems.

CONTACT PERSONS: Dr. Pieter R. Cullis; Dr. Michael J. Hope; Ian Robertson.

CANADIAN RED CROSS SOCIETY

(Blood Transfusion Service)

HEAD OFFICE

1800 Alta Vista Drive
Ottawa, Ontario K1G 4J5

RESEARCH FACILITY

85 Plymouth Street
Ottawa, Ontario K1S 3E2

Telephone: (613) 739-3000
Telex:
Fax:

Medical Director: Gail Rock, Ph.D., M.D.

Senior Scientist: Peter Ganz, Ph.D.
Telephone: (613) 560-7440
Fax: (613) 560-7226

Employees: 130
R & D Employees: 30

Founded: 1945
Annual Sales: N/A
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Human health care.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Pharmaceuticals, vaccines, diagnostics (monoclonal antibodies), medical devices/instrumentation.

MANUFACTURING: Pharmaceuticals, vaccines, diagnostics (monoclonal antibodies), medical devices/instrumentation.

SALES/OTHER(S):

AFFILIATIONS: Baxter; Immuno (Austria); Haemonetics (U.S.A.).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

CANADIAN SEED COATERS LIMITED

HEAD OFFICE

**P.O. Box 219
210 Wanless Drive
Brampton, Ontario L6V 2L2**

Telephone: (416) 846-5080
Telex: 069-7535
Fax: (416) 846-6909

President: **G. Eros**

R & D Director: **A. Klassen, Ph.D.**
Telephone: (306) 445-1077

Employees: 11+15 seasonal
R & D Employees: 4
(In biotechnology: 3)

RESEARCH FACILITY

**Same as Head Office and
P.O. Box 1748
North Battleford,
Saskatchewan S9A 3W2**

Manufacturing Director:
T. Baillie

Telephone: (416) 846-5080

Founded: 1976
Annual Sales: N/A
R & D Expenses: \$0-0.5M
(In biotechnology: N/A)

PRINCIPAL ACTIVITIES: Laboratory and field trial research on seed coating - includes enzymes, growth promoting regulators, agricultural chemicals and rhizobium.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Rhizobial research. Field work on canola hybrids.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Seed coating materials.

Seed coating equipment.

AFFILIATIONS: Elders IXL Ltd., Melbourne, Australia; Oseco Inc., Brampton, Ontario.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: 1. Seed coating franchises and/or joint ventures. 2. Field trial facilities for canola and forages in Western Canada.

COMMENTS:

CONTACT PERSON: T.S. Baillie

CANBER INDUSTRIES LIMITED

HEAD OFFICE

Site 34, P.O. Box 58
6028 Mount View Road
Lantzville, British Columbia V0R 2H0

Telephone: (604) 390-3113
Telex:
Fax:

President: Allan J. McInnes
R & D Director: Allan J. McInnes
Telephone: (604) 390-3113

Employees: 2
R & D Employees:
(In biotechnology: 5 Contractual)

RESEARCH FACILITY

Contractual

Manufacturing Director:
Allan J. McInnes

Telephone: (604) 390-3113

Founded: 1979
Annual Sales: N/A
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: R & D applied to aerobic and anaerobic fermentation technology, various enzyme formulas for cell separation of organic matter, to allow natural microorganism development over decomposition controls.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Discovery of methods to start-up and complete anaerobic facultative digestion over organic wastes held in toxic inhibited state i.e. sewage, garbage, agricultural, etc. By-product recovery from anaerobic facultative formula provides a pure form of biogas, methane gas fraction increase above 30% over natural (nature) processes.

MANUFACTURING: Bio catalytic seeding formulas. Waste management products, drain cleaners, grease trap cleaners, animal livestock, farm wastes, etc. fertilizer preparation method. Pollution control products to clean up ground water reserves, garbage waste management and control products.

SALES/OTHER(S): To Italy, Spain, Switzerland, France, Taiwan, Puerto Rico, Philippines, China, Nepal, U.S.A.

OTHER ACTIVITIES:

AFFILIATIONS: Bercan Environmental Resources Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Introduction is required for bio catalytic seeding formulas designed to increase fermentation over organic wastes, biomass. Formula method will provide increased methane gas production by above 30% over natural fermentation process.

COMMENTS: The importance of bio catalytic seeding formulas and their application provides a method of reducing pollution through fermentation accelerators and by this, further destroying harmful microorganism development, further providing a method of renewable energy development in third world countries that cannot afford fossil fuels.

CONTACT PERSON: Director, BIOGAS RESEARCH AND TRAINING CENTRE FOR ASIA AND THE PACIFIC, Number 13 Fourth Block, People's South Street, Chengdu, Sichuan, The People's Republic of China.

CANGENE CORPORATION

HEAD OFFICE

**3403 American Drive
Mississauga, Ontario L4V 1T4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 673-0200**

Telex:

Fax: **(416) 673-5123**

President: **James Rae**

Chairman: **Dr. Eric James**

R & D Director: **Robert T. Garvin**

Telephone:

Employees:

R & D Employees: **37**

(In biotechnology: **30**)

Founded:

1984

Annual Sales:

\$0-1M

R & D Expenses:

\$1-3M

(In biotechnology: **\$2.5M**)

PRINCIPAL ACTIVITIES: rDNA genetic engineering research and development.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: rDNA genetic engineering. Gene expression for the manufacture, use and sale of nucleic acid-based diagnostics and bio-pharmaceuticals.

MANUFACTURING:

SALES/OTHER(S): Marketing multi-tissue block kits manufactured by subsidiary.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Mr. James Rae

OTHER ACTIVITIES:

CANPOLAR INC.

HEAD OFFICE

**421 Eglinton Avenue West, Suite 4
Toronto, Ontario M5N 1A4**

Telephone: **(416) 487-1581**
Telex: **06-218813**
Fax:

President: **Dr. James R. Rossiter**

R & D Director: **Dr. Ernest M. Reimer**
Telephone: **(709) 722-6067**

Employees: **8**
R & D Employees **8**
(In biotechnology: **4**)

RESEARCH FACILITY

**31 Peet Street
Ashley Building
St. John's, Newfoundland
A1B 3W8**

Founded: **1983**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0.5-1M**
(In biotechnology: **\$150K (87-88 estimate)**)

PRINCIPAL ACTIVITIES: Development of sensing systems for industrial applications.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Development of biosensors for food processing applications, especially fish quality measurement.**

MANUFACTURING:

SALES/OTHER(S): **Sales of KV-101 fish quality testing device.**

OTHER ACTIVITIES:

Fish processing technology.

R & D consulting.

AFFILIATIONS: **Intera Technologies Ltd., Calgary. Working relationship with Chemical Sensors Group; University of Toronto; Memorial University of Newfoundland.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Investment in Canpolar's biosensor technology; joint ventures.**

COMMENTS:

CONTACT PERSONS: **Dr. James Rossiter; Dr. Ernest Reimer.**

CANPRO LABORATORIES (RESEARCH FOODS)

HEAD OFFICE

**77 Champagne Drive
Downsview, Ontario**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 635-8692**
Telex: **06-218797**
Fax: **(416) 635-8444**

Manufacturing Director:
Dr. A. Gawhary

Telephone: **(416) 635-8692**

President: **H. Tenenbaum**

R & D Director: **Dr. A. Gawhary**
Telephone: **(416) 635-8692**

Employees: **12**
R & D Employees: **4**
(In biotechnology: **4**)

Founded: **1973**
Annual Sales: **\$30+M**
R & D Expenses: **\$0.5-1M**
(In biotechnology: **\$0.5-1M**)

PRINCIPAL ACTIVITIES: Government contracts and private sector: Agriculture: pesticides/herbicides. Health care: human and animal pharmaceuticals, medical devices/instrumentation.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Agriculture: pesticides/herbicides. Health care: human and animal pharmaceuticals, medical devices/instrumentation.

MANUFACTURING: Custom-made pharmaceuticals for human and veterinary use; medical devices.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Agra Industries, CN Towers, Saskatoon, Saskatchewan.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

CANVIRO CONSULTANTS
(A Division of CH₂M-Hill Engineering Ltd.)

HEAD OFFICE

Calgary, Alberta T2E 2R2

Telephone: (403) 230-0100
Telex:

President: S.L. Lackey

R & D Director: Dr. E.E. Shannon
Telephone: (519) 579-3500
Fax: (519) 579-8986

Employees: 100
R & D Employees: < 5

RESEARCH FACILITY

180 King Street South, Suite 600
Waterloo, Ontario N2J 1P8

Founded: 1977
Annual Sales: \$5-7M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Environmental consulting and aerobic biological waste treatment.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Consulting for process development of anaerobic treatment and biogas utilization. Also aerobic biological wastewater treatment.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

- Design of industrial and municipal wastewater treatment systems.
- Treatability testing.
- Laboratory analysis.

AFFILIATIONS: CH₂M-Hill Inc.; Canviro Laboratories Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Fee for services.

COMMENTS: Wide range of experience in food and beverage mineral resource, agriculture and related fields.

CONTACT PERSONS: Dr. E.E. Shannon; Ray Stickney.

CAPE BRETON DEVELOPMENT CORPORATION

HEAD OFFICE

**Cabot House, Kings Road
P.O. Box 2500
Sydney, Nova Scotia B1P 6K9**

Telephone: (902) 564-2848
Telex: 019-35132
Fax: (902) 564-2589

President: **Dr. Teresa MacNeil (Acting)**

R & D Director: **Adrian White**
Telephone: (902) 564-2563

Employees: **4000**
R & D Employees: **15**
(In Biotechnology: **1**)

RESEARCH FACILITY

Same as Head Office

Vice-President, Mining:
Bob Cooper

Telephone: (902) 564-2804

Founded: **1967**
Annual Sales: **\$30+M**
R & D Expenses: **\$1-3M**
(In Biotechnology: **\$50K**)

PRINCIPAL ACTIVITIES: Coal mining and processing.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Work with Gemini Biochemical Research, Calgary, on the use of bacteria to consume methane to reduce explosive hazards.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Collaboration and contact with others interested in this application.

COMMENTS: Federal Crown Corporation.

CONTACT PERSON: J.C. Campbell, Senior Research Engineer, Tel.: (902) 564-2894.

OTHER ACTIVITIES:

CARRATECH INC.

HEAD OFFICE

**West Royalty Industrial Park
Charlottetown, Prince Edward Island C1E 1B0**

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 566-5325
Telex: 014-44109
Fax: (902) 566-2498

President: J.T. Zolper

R & D Director: R. John Whitaker
Telephone: (902) 675-4895

Employees: 6
R & D Employees: 4

Founded: 1984
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Development of processes for extraction/refinement of chemicals from algae.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Lambda/Kappa carrageenan separation process. Carrageenan/Polysaccharide refining processes.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: George I.H. Nason, Business Manager.

OTHER ACTIVITIES:

CASCO INC.

HEAD OFFICE

**401 The West Mall
Etobicoke, Ontario M9C 5H9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 620-2300**

Telex:

Fax: **(416) 620-2385**

President: **Bruce MacNaughton**

R & D Director: **G.N. Fulford**

Telephone: **(416) 620-2363**

Employees: **458**

R & D Employees: **6-8**

Manufacturing Director:

Arnold Burwell

Telephone: **(416) 620-2393**

Founded:

1858

Annual Sales:

\$30+M

R & D Expenses:

\$0-0.5M

PRINCIPAL ACTIVITIES: Feed - Grain processing (corn wet milling) to supply food processing plants.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Enzyme application to starch and corn.**

MANUFACTURING: **Enzyme used in production of corn sweeteners. Corn syrups, glucose, maltose and high fructose.**

SALES/OTHER(S):

AFFILIATIONS: **CPC International, U.S.A.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **G.N. Fulford, Vice-President and Technical Director.**

CB RESEARCH INTERNATIONAL CORPORATION

HEAD OFFICE

P.O. Box 2010,
#101-9865 West Saanich Road,
Sidney, British Columbia V8L 3S3

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 655-1944

Telex:

Fax: (604) 655-7131

President: Dr. Bryan Imber

R & D Director: Dr. Shawn Severn

Telephone: (604) 655-1944

Employees: 15

R & D Employees: 13

Founded: 1986

Annual Sales: \$0-1M

R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: R & D, consulting, biohazard research.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT:

1. DNA probes
2. Antibody probes
3. Chemical probes
4. Biodegradation
5. Mineral binding
6. Biological monitoring systems

MANUFACTURING:

SALES/OTHER(S): Consulting.

OTHER ACTIVITIES:

Environmental monitoring.

Environmental chemistry.

AFFILIATIONS: CBM Bioventures: Dr. W. Kay, Tel.: (604) 655-3321, address as above; CBR International, Long Beach, California.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: 1. Clients. 2. Cooperative ventures in resource industry.

COMMENTS:

CONTACT PERSONS: Dr. Bryan Imber; Dr. S. Severn.

CEDARLANE LABORATORIES LIMITED

HEAD OFFICE

**5516, 8th Line, R.R. 2
Hornby, Ontario L0P 1E0**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 878-8891**
Telex: **982340**
Fax:

Manufacturing Director:
J.C. Course

Telephone: **(416) 878-8891**

President: **J.C. Course**

R & D Director: **Ms. C.N. Greer**
Telephone: **(416) 878-8891**

Employees: **9**
R & D Employees: **3**

Founded: **1975**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Manufacturer of reagents for tissue typing and immunology research.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **On-going reagents for immunology research.**

MANUFACTURING: **Monoclonal antibodies, complement, tissue typing reagents, HLA-AB typing trays, cell separation medium.**

SALES/OTHER(S): **Canadian distributor for several international companies offering: affinity purified antibodies; monoclonal antibodies; oncogene probes and controls; immunological reagents; RIA kits; peptides; hormones; cell separation medium; HLA-DR typing trays; monoclonal antibodies to HIV proteins; immunological reagents; growth factors; southern blot apparatus and reagents.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Distributors in countries where Cedarlane is not currently represented. Marketing agreements with researchers interested in commercializing their product.**

COMMENTS:

CONTACT PERSON: **Ms. C.N. Greer**

OTHER ACTIVITIES:

CENTRE DE RECHERCHE EN SYLVICHIMIE DE L'OUTAOUAIS INC.

HEAD OFFICE

11, rue Main
C.P. 38
Gatineau (Québec) J8P 8J1

Telephone: (819) 643-9099
Telex:
Fax:

President: Yvon Gauthier

R & D Director: Werner Kaeppler
Telephone: (819) 643-9099

Employees: 8
R & D Employees: 5
(In biotechnology: 2)

Founded: 1984
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$150K)

PRINCIPAL ACTIVITIES: R & D on the use of biomass for manufacturing chemicals, cellulose and food products.

RESEARCH FACILITY

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Agriculture: biodecomposition and fermentation. Forestry: products; cellulolysis and fermentation; lignification; new products. Single-cell proteins. Waste treatment. New products. Systems development. Chemical products and alternative energies.

MANUFACTURING: Fuel ethanol.

SALES/OTHER(S): Consulting. Research contracts in above-mentioned areas.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Yvon Gauthier

OTHER ACTIVITIES:

Scale-up of chemicals or semi-chemical processes for utilization of cellulosic bio-mass.

CENTRE D'INSÉMINATION ARTIFICIELLE DU QUÉBEC (CIAQ) INC.

HEAD OFFICE

**3450, rue Sicotte
C.P. 518
Saint-Hyacinthe (Québec) J2S 7B8**

Telephone: (514) 774-1141
Telex: 05-830542
Fax: (514) 774-9318

President: **William Lacoursière,**
Executive Director: **Robert Chicoine**
R & D Director: **Sylvie Des Marchais**
Telephone: (514) 774-1141

Employees: 128
R & D Employees: 4
(In biotechnology: 0)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Fernand Laliberté

Telephone: (514) 774-1141

Founded: 1948
Annual Sales: \$10-15M
R & D Expenses: \$0-0.5M
(In biotechnology: \$350K)

PRINCIPAL ACTIVITIES: Production of bovine semen and embryos. Improvement of the live stock.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Micromanipulation, sexing and freezing of embryos.

MANUFACTURING: Production of embryos.

SALES/OTHER(S): Frozen embryos.

OTHER ACTIVITIES:

Freezing of bovine semen.

Bull semen.

AFFILIATIONS: Faculté de médecine vétérinaire, Université de Montréal (CRRA); Agriculture Canada - Station de recherche de Lennoxville; Association canadienne des éleveurs de bétail.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Technology transfer; temporary exchanges of personnel; participation of our R & D employees to research projects carried out in specialized laboratories.

COMMENTS:

CONTACT PERSONS: Sylvie Des Marchais, Agronomist; Daniel Bousquet, U.M.

CHAMPLAIN INDUSTRIES LIMITED

HEAD OFFICE

**7200 West Credit Avenue
Mississauga, Ontario L5N 5N1**

Telephone: (416) 826-0801
Telex: 06-218719
Fax: (416) 826-0212

President: **Colwyn G. Rich**

R & D Director: **Jane E. Rich**
Telephone: (416) 826-0801

Employees: 150
R & D Employees: 3

RESEARCH FACILITY

**Same as Head Office and
Stanbridge Station, Québec
J0J 2J0**

Manufacturing Director:
Carl H. Finch

Telephone: (416) 826-0801

Founded: 1925
Annual Sales: \$30+M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Manufacture of hydrolyzed vegetable proteins, yeast extracts, peptones, milk replacers, caseinates, gum arabic.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Work is being carried out on casein, soy and gelatin peptones, using enzymes. Some work with fermentation. Some work with yeast.

MANUFACTURING: Manufacture of casein peptones.

SALES/OTHER(S):

AFFILIATIONS: CIFST; AOAC; IFT.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Information on world-wide biotechnology activities in the form of a publication.

COMMENTS:

CONTACT PERSON: Jane Rich

OTHER ACTIVITIES:

- Hydrolyzed vegetable proteins;
- Developing new flavours;
- Improving manufacturing processes;
- Non dairy creamers;
- Hydrolyzed vegetable proteins;
- Developing new flavours;
- Improving manufacturing processes;
- Non-dairy creamers.

CHATEAU DES CHARMES WINES

HEAD OFFICE

P.O. Box 280

St. Davids, Ontario L0S 1P0

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 262-4219**

Telex:

Fax:

Manufacturing Director:

Paul M. Bosc

President: **Rodger Gordon**

R & D Director: **Paul M. Bosc**

Telephone: **(416) 262-4219**

Employees: **20**

R & D Employees: **6**

Founded: **1977**

Annual Sales: **\$1-3M**

R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Viticulture, winery.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Clonal evaluation for winter hardiness of vines.**

MANUFACTURING: **Wine making.**

SALES/OTHER(S): **Wholesale and retail.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACTS PERSONS: **Paul M. Bosc; Dr. John Paroschky.**

OTHER ACTIVITIES:

CHEMBIOMED LIMITED

HEAD OFFICE

**Edmonton Research and Development Park
P.O. Box 8050
Edmonton, Alberta T6H 4N9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(403) 450-6800**
Telex: **037-3886**
Fax: **(403) 450-6899**

Manufacturing Director:
David Rafter

Telephone: **(403) 450-6800**

President: **E.J. Cuyler, B.Sc., M.B.A.**

R & D Vice-President: **Dr. Frank M. Unger**
Telephone: **(403) 450-6800**

Employees: **70+**
R & D Employees: **40**

Founded: **1977**
Annual Sales: **\$1-3M**
R & D Expenses: **\$5-7M**

PRINCIPAL ACTIVITIES: Development, manufacture and sale of blood-typing reagents and immunosorbents for hematological applications.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Carbohydrate haptens; lectins; anti-carbohydrate antibodies, proprietary extracorporeal devices (BIOSYNORB™). Novel adjuvant principles. Tumor diagnostics.

MANUFACTURING: Blood typing monoclonal antibodies. Affinity purified monoclonal antibodies.

SALES/OTHER(S): Blood typing reagents.

OTHER ACTIVITIES:

Synthesis of immune-complexing soluble oligosaccharides. Synthesis of oligosaccharide analogs.

Carbohydrate-based immunosorbents (SYNORB™); latex coated with artificial antigens for agglutination tests.

AFFILIATIONS: Owned by Government of Alberta.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint ventures with Canadian firms/institutions who lack suitable production facilities but have proprietary technology to develop and market innovative, health-care oriented products.

COMMENTS:

CONTACT PERSON: Dr. Frank M. Unger, Vice-President, Research and Development.

CHEMFET CANADA LTD.

HEAD OFFICE

**340-342 Saulteaux Crescent
Winnipeg, Manitoba R3J 3T2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(204) 831-8077**

Telex:

Fax: **(204) 831-8069**

Manufacturing Director:

Al Hayden

President: **Dr. Garry J. Smith**

R & D Director: **Al Hayden**

Telephone:

Employees: **46**

R & D Employees: **12**

Founded:

1984

Annual Sales:

\$15-30M

R & D Expenses:

\$1-3M

PRINCIPAL ACTIVITIES: Development and manufacture of Chemfet technology chemical sensor products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Fetal scalp pH electrode; levin tube pH probe; dental pH probe; blood pH and potassium electrode.**

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **US parent - Chemfet Corporation of Bellevue, Washington; NASA; various corporate co-developers of Chemfet technology applications.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Seeking product co-development partners for Chemfet technology applications.**

COMMENTS: **Partners will contribute to development programs and will have opportunities for exclusive licensing of application.**

CONTACT PERSON: **Dr. Garry J. Smith, President.**

CIBA-GEIGY CANADA LTD. (Agricultural Division)

HEAD OFFICE

**6860 Century Avenue
Mississauga, Ontario L5N 2W5**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 821-4420**
Telex:
Fax:

Manufacturing Director:
G.P. Rich (Agricultural)

Telephone: **(519) 623-7600**

President: **J. Wells**

R & D Director: **Dr. D.R. Ridley (Agricultural)**
Telephone: **(416) 821-4420**

Employees: **250**
R & D Employees: **30**

Founded: **1970**
Annual Sales: **\$30+M**
R & D Expenses: **\$3-5M**

PRINCIPAL ACTIVITIES: Agricultural - pesticides, seeds, animal health care, plant protection.

BIOTECHNOLOGY ACTIVITIES: Agricultural

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Animal health care, plant protection, seeds.**

MANUFACTURING: **None at present.**

SALES/OTHER(S): **None at present.**

AFFILIATIONS: **Funk Seeds Canada, Ciba-Geigy Ltd., Basle, Switzerland.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Working with research personnel within Ciba-Geigy internationally, and collaborating with Canadian university and government biotechnology scientists.**

COMMENTS:

CONTACT PERSON: Dr. Ken W. Campbell, Manager, Research and Development, Funk Seeds, Ciba-Geigy Canada Ltd., RR#1 Plattsville, Ontario N0J 1S0, Tel.: (519) 696-2246.

C-I-L INC.

HEAD OFFICE

90 Sheppard Avenue East
P.O. Box 200, Station "A"
North York, Ontario M2N 6H2

Telephone: (416) 229-7000
Telex: 069-86505
Fax:

RESEARCH FACILITY

C-I-L Research Centre
Sheridan Park Research
Community
2101 Hadwen Road
Mississauga, Ontario L5K 2L3

President and Chairman of the Board: **C.H. Hantho**
R & D Director, Biotechnology: **Dr. D.J. Gannon**
Telephone: (416) 823-7160
Fax: (416) 823-0044

Employees: **6,000**
R & D Employees: **350**
(In biotechnology: **10**)

Founded: **1862**
Annual Sales: **\$1.4B**
R & D Expenses: **\$20-30M**
(In biotechnology: **\$1M**)

PRINCIPAL ACTIVITIES: **Chemical production and distribution. Agricultural microbiology. Forest industry inputs.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Microbial pesticides. Forage inoculants.**

MANUFACTURING:

SALES/OTHER(S): **Forage inoculants.**

OTHER ACTIVITIES

AFFILIATIONS: **Imperial Chemical Industries PLC is the majority shareholder (73%) of C-I-L Inc. Remainder of shares are publicly traded on TSE.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Interested in licensing technologies for agricultural and forest industry applications.**

COMMENTS:

CONTACT PERSONS: **N.C.C. Gray; D.J. Gannon.**

LES CLAY & SON LIMITED

HEAD OFFICE

#3666-224 Street, Box 3040
Langley, British Columbia V3A 4R3

RESEARCH FACILITY

Same as Head Office

Telephone: (804) 530-5188
Telex: 04-352848VCR
Fax: (804) 534-3463

President: Leslie K.C. Clay

R & D Director: Leslie K.C. Clay
Telephone: (804) 530-5188

Employees: 17
R & D Employees: 3
(In biotechnology: 3)

Founded: 1956
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$150K)

PRINCIPAL ACTIVITIES: Tissue culture of ornamental and horticultural species.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Ongoing research on development of new species through tissue culture. Development of a practical means of tissue culture of forest species.

MANUFACTURING:

SALES/OTHER(S): Worldwide distribution of small plants grown from tissue culture.

OTHER ACTIVITIES:

AFFILIATIONS: Affiliated with Canadian Forest Products on Forestry Research of Chamaecyparis nootkatensis, Pseudotsuga menziesii and Picea glauca through an FRDA arrangement.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

CLEARWATER FINE FOODS INC.

HEAD OFFICE

**757 Bedford Highway
Bedford, Nova Scotia B4A 2X3**

Telephone: **(902) 443-0550**
Telex: **019-22729/CLEARCO**
Fax: **(902) 443-8365**

President: **John Risley**

R & D Director: **Thomas H. Morse, Ph.D.**
Telephone: **(902) 443-0550**

Employees: **4,000**
R & D Employees: **10**

RESEARCH FACILITY

**Same as Head Office
and
Clarke's Harbour, Nova Scotia
B0W 1P0**

Manufacturing Director:
Colin MacDonald

Telephone: **(902) 443-0550**

Founded: **1977**
Annual Sales: **\$300M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Industry leader in shellfish harvesting, processing and marketing.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Ongoing development in packaging systems for fresh and frozen shellfish.

MANUFACTURING: Biological system storage for crustaceans and other related aquaculture systems.

SALES/OTHER(S): Fresh and frozen distribution channel articulation.

OTHER ACTIVITIES:

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: International and domestic standardization of food laws and distribution standards.

COMMENTS:

CONTACT PERSON: Thomas H. Morse, Ph.D.

COASTECH RESEARCH INC.

HEAD OFFICE

869 West Third Street
North Vancouver, British Columbia

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 980-5992
Telex: 04-352888
Fax: (604) 980-2737

President: P.B. Marchant

R & D Director: R.W. Lawrence
Telephone:

Employees: 26
R & D Employees: 12

Founded: 1982
Annual Sales: \$1-3M
R & D Expenses: \$1-1.2M

PRINCIPAL ACTIVITIES: Metallurgical testing and research and piloting for process flow-sheet development.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Bioleaching to enhance gold recovery from refractory ores.

MANUFACTURING: Design and installation of commercial process bioleach facilities.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: P.B. Marchant

OTHER ACTIVITIES:

CONNAUGHT LABORATORIES LIMITED

HEAD OFFICE

**1755 Steeles Avenue West
Willowdale, Ontario M2R 3T4**

Telephone: (416) 667-2701
Telex: 22184
Fax: (416) 667-0313

President: **Alun Davies**

R & D Director: **Dr. Keith J. Dorrington**
Telephone: (416) 667-2826

Employees: **1100**
R & D Employees: **162**
(In biotechnology **162**)

RESEARCH FACILITY

**Connaught Research Institute
1755 Steeles Avenue West
Willowdale, Ontario M2R 3T4**

Manufacturing Director:
Peter Campbell

Telephone: (416) 667-2663

Founded: **1914**
Annual Sales: **\$191M**
R & D Expenses: **\$20M**
(In biotechnology: **\$20M**)

PRINCIPAL ACTIVITIES: **Vaccines, insulin (joint venture with NOVO).**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Emphasis on recombinant DNA-based pertussis and hepatitis vaccines. Also monoclonal antibody research, development of diagnostic kits, pilot plant fermentation and downstream processing.

MANUFACTURING: Microcarriers for scale-up of polio vaccines and diagnostic kits. Use of human diploid cells for rabies vaccine production.

SALES/OTHER(S):

OTHER ACTIVITIES:

- application of liposomes to vaccine delivery.
- pancreatic islet encapsulation and transplantation.

AFFILIATIONS: Connaught Laboratories Inc., Swiftwater, Pennsylvania; Connaught-Novo Limited, Willowdale, Ontario.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint ventures (R & D) production and/or marketing of products obtained under licence; International marketing of products through UNICEF, WHO, etc.

COMMENTS:

CONTACT PERSON: Dr. John R. Vose, Director, Technology Development, Tel.: (416) 667-2827.

CONTINENTAL PHARMA CRYOSAN INC.

HEAD OFFICE

1625, rue Sherbrooke ouest
Montréal (Québec) H3H 1E2

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 935-4004

Telex:

Fax: (514) 935-5370

President: Thomas Hecht

R & D Director: Dr. Robert Heft

Telephone: (514) 935-4004

Employees: 25

R & D Employees: 10

(In biotechnology: 10)

Founded: 1972

Annual Sales: \$60+M

R & D Expenses: \$0-0.5M

(In biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: One of the world's largest, independent suppliers of source plasma and blood derivatives for expanding home health care operations in the U.S.A. Supplies vaccines through its subsidiary Conpharma Vaccines Ltd. to international agencies.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Gene cloning. Enzyme immobilization. Biocompatible materials. Heparin monitoring and control. Heparin filters for cardiac surgery and hemodialysis.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Massachusetts Institute of Technology, (Boston); Biotechnology Research Institute, (Montreal).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

COOLWATER FARMS LIMITED

HEAD OFFICE

591 Liverpool Road
Pickering, Ontario L1W 1R1

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 831-0697
Telex:
Fax:

General Manager:
G.A. Kamaitis

Telephone: (416) 831-0697

President: Wm. J. Hemmerick

R & D Vice-President: J.H. Neil
Telephone: (416) 831-0697

Employees: 18
R & D Employees: 4
(In Biotechnology: 4)

Founded: 1985
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In Biotechnology: \$100K)

PRINCIPAL ACTIVITIES: Aquaculture production of edible fish. R & D relating to utilization of aquatic resources.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Manipulation of reproduction to provide year-round stock. Harvest a culture of aquatic invertebrates for culture of new fish species. Fish waste utilization.

MANUFACTURING: Development of fertilizer from fish waste solids by aerobic composting. Harvesting of several trophic levels of aquatic production and use as fish feed.

SALES/OTHER(S): Products in development stage or utilized internally for fish production.

OTHER ACTIVITIES:

AFFILIATIONS: Member: International Association for Great Lakes Research; Water Pollution Control Federation; American Fisheries Society; International Association of Theoretical and Applied Limnology; American Society of Limnology and Oceanography, Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exchange of ideas and technology for processes and products resulting from aquatic production. Development of joint venture opportunities. Sharing of facility and resources with University and Government communities. Seed money for development of opportunities.

COMMENTS: Some R & D conducted at same facility by Limnos Ltd., John Neil, President.

CONTACT PERSON: John H. Neil, M.A., C.P.H.

CORPORATION BDG

HEAD OFFICE

**1708, rue de Pont-Gravé
Saint-Bruno (Québec) J3V 4Y4**

RESEARCH FACILITY

**Biotechnology Research Institute
6100, avenue Royalmount
Montréal (Québec) H4P 2R2**

Telephone: **(514) 653-2205**
Telex:
Fax:

President: **Gilles Brisson**

R & D Director: **Yves Deschamps**
Telephone: **(514) 496-6366**

Employees: **1**
R & D Employees: **1**
(In biotechnology: **1**)

Founded: **1986**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Evaluation, research and development of diagnostic equipment for medical laboratories. Professional consultants.

BIOTECH. OLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Clarification of principles and testing of diagnostic products.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **We are looking for partnerships in diagnostic areas.**

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

COSEM NEUROSTIM LTÉE

HEAD OFFICE

**2954, boulevard Laurier, Suite 330
Sainte-Foy (Québec)**

RESEARCH FACILITY

Same as Head Office

Telephone: **(418) 657-7387**

Telex:

Fax:

President: **J.M. Gauthier, P.Eng.**

R & D Director: **J. Beaulieu, Ph.D.**

Telephone: **(418) 657-7387**

Employees: **8**

R & D Employees:

(In biotechnology: **5 ***)

Founded:

1987

Annual Sales:

\$0-1M

R & D Expenses:

\$1-3M

(In biotechnology: **\$1.5M**)

**PRINCIPAL ACTIVITIES: Research, development, manufacture and sale of body-im-
planted central nervous system stimulators (Cochlear implants).**

BIOTECHNOLOGY ACTIVITIES:

**RESEARCH & DEVELOPMENT: Health and medical care. Medical
systems and instruments.**

**MANUFACTURING: Health care products. Medical systems
and instruments.**

**SALES/OTHER(S): Health care products. Medical systems
and instruments.**

AFFILIATIONS: TIEM Canada Inc.

**FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Our company would be interested in
partnerships for implementation of the above-mentioned technology.**

COMMENTS: We have developed a manufacturing process for microelectrodes.

CONTACT PERSON: J.M. Gauthier, P.Eng., President.

OTHER ACTIVITIES:

* Contractual R & D is carried out by Canadian university laboratories.

CSP FOODS LTD.

HEAD OFFICE

#870 - 360 Main Street
Winnipeg, Manitoba R3C 3Z3

RESEARCH FACILITY

75 - 33rd Street East
Saskatoon, Saskatchewan
S7K 3K7

Telephone: (204) 947-6871
Telex: 075-87638
Fax: (204) 946-1157

President, C.E.O.: A. Huffman

R & D Director: H. Schafer
Telephone: (306) 862-4686

Employees: 450
R & D Employees: 4

Founded: 1975
Annual Sales: \$200+M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Production of edible oils including canola, sunflower, and high erucic acid oil.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of new oilseed crops. Improvement of existing crops through biotechnology.

MANUFACTURING: Use of enzymatic processes.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Cooperative Crop Development Group; Enersearch; Canola Council of Canada.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Collaboration in the fields of applied biotechnology in oilseed production and processing.

COMMENTS:

CONTACT PERSON: Mark Pickard, Technical Project Manager, CSP Foods Ltd.

CYANAMID CANADA INC.

HEAD OFFICE

**88 McNabb Street
Markham, Ontario L3R 6E6**

RESEARCH FACILITY

**Head Office - Administration:
Baie D'Urfé, Québec
Niagara Falls, Ontario**

Telephone: **(416) 470-3600**
Telex: **06-966602**
Fax: **(416) 470-2167**

President: **W.J. Foran**

R & D Director: **Dr. G.B. Kinoshita (Crop Protection Division)**
Telephone: **(416) 470-3675**

Employees:	2000	Founded:	1907
R & D Employees:	50	Annual Sales:	\$30+M
		R & D Expenses:	\$10+M

PRINCIPAL ACTIVITIES: Agricultural chemicals, specialty chemicals, plant food, pharmaceuticals, medical devices.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Animal health, human health, pesticides, herbicides.**

MANUFACTURING: **Pharmaceuticals (human); animal vaccines (through Langford).**

SALES/OTHER(S): **Crop protection chemicals, pharmaceuticals, animal health products.**

OTHER ACTIVITIES:

Electronic chemicals, mining reagents.

Chemicals.

Plant food, medical devices.

AFFILIATIONS: **Langford Inc.; Quadra Logic Technologies Inc.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **D.P. Lawson, Tel.: (416) 470-3755.**

CYBERFLUOR INC.

HEAD OFFICE

**179 John Street
Toronto, Ontario M5T 1X4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 977-5450**
Telex: **0622335**
Fax: **(416) 977-5032**

Manufacturing Director:
James Clelland

Telephone: **(416) 977-5450**

President: **James Clelland**

R & D Director: **E.P. Diamandis, M.D., Ph.D.**
Telephone: **(416) 977-5450**

Employees: **23**
R & D Employees: **12**

Founded: **1985**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Research, development, manufacture and marketing of time-resolved fluorescence (TR-FIA) instruments and tests for hospital and commercial laboratories.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT:

- monoclonal antibodies
- patented fluorescent label (EuroFluor S™)
- Immunodiagnostic tests include thyroid and non-thyroid hormones, reproductive endocrinology, neonatal screening, anemia and therapeutic drug monitoring.

MANUFACTURING: Immunodiagnostic tests manufactured in Canada.

SALES /OTHER(S): Sales of both instruments and immunodiagnostic tests through distributors.

OTHER ACTIVITIES:

Instruments using laser technology.

Instruments manufactured in Canada.

AFFILIATIONS: The Hospital for Sick Children's Research Development Corporation.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Distributorships, corporate partnerships, licensing (Instrument and/or immunodiagnostic test manufacture).

COMMENTS:

CONTACT PERSON: Ms. Theaizel Lee, Product Manager.

F.V.M.P.C.A. DAIRYLAND FOODS

HEAD OFFICE

**6800 Lougheed Highway
Burnaby, British Columbia V5A 1W2**

Telephone: **(604) 420-6611**
Telex: **043-54591**
Fax: **(604) 420-9700**

President: **P.J. Friesen**
Chief Executive Officer: **D.E. Coe**
R & D Director: **R.E.T. Irwin**
Telephone: **(604) 420-6611**

Employees: **1200**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
R.G. Webb

Telephone: **(604) 420-6611**

Founded: **1917**
Annual Sales: **\$30+M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Dairy processing, dairy food manufacturing, beverage production.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Reverse osmosis concentrations of milk whey and skim milk and the utilization of those concentrates in dairy foods. Product development using UHT aseptic packaging process to other than milk dairy foods.

MANUFACTURING: Dairy foods, fruit juices and drinks.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

DEARBORN CHEMICAL COMPANY LIMITED

Dearborn Environmental Consulting Group

HEAD OFFICE

**P.O. Box 3060, Station A
Mississauga, Ontario L5A 3T5**

Telephone: **(416) 279-2222**
Telex: **06-961145**
Fax: **(416) 279-0020**

President: **H. Shymko**

R & D Director: **J. Waller, Ph.D.**
Telephone: **(416) 279-2222**

Employees: **260**
R & D Employees: **6**
(In biotechnology: **4**)

PRINCIPAL ACTIVITIES: **Water treatment.**

RESEARCH FACILITY

**3451 Erindale Station Road
P.O. Box 3060, Station A
Mississauga, Ontario L5A 3T5**

Manufacturing Director:
V. Uzb'alis

Telephone: **(416) 279-2222**

Founded: **1913**
Annual Sales: **\$30+M**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$0.5M**)

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fuel and Energy: Biogas (anaerobic fermentation). Pollution control: anaerobic treatment of toxic wastewater. Enzymes: enzymes for biotreatment enhancement.

MANUFACTURING: Automated process control software for anaerobic and aerobic wastewater treatment.

SALES/OTHER(S): Sales for toxic industrial wastewater biotreatment systems.

AFFILIATIONS: **W.R. Grace & Co.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Igor J. Marvan, P.Eng., Technical Director.**

OTHER ACTIVITIES:

Novel solid and liquid wastes treatment technology development.

Wastewater treatment chemicals (biocides, polymers, etc.).

Water/wastewater treatment chemical sales support. Computer-aided modelling of advanced wastewater treatment systems.

DEGREMONT - INFILCO LTÉE

HEAD OFFICE

**160-D, boulevard St-Joseph
Lachine (Québec) H8S 2L3**

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 634-8011
Telex: 05-821692
Fax: (514) 634-3102

President: **O. Skorzewski, P.Eng.**

R & D Director: **Robert Cyr, P.Eng.**
Telephone: (514) 634-8011

Employees: 80
R & D Employees: 2

Founded: 1960
Annual Sales: \$7-10M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Treatment of drinking water, industrial effluents and wastewater by biological, physical, chemical or physico-chemical processes. Purification of wastewater.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Biological filtering of wastewater using Biolite™ media to trap and retain bacteria for wastewater degradation.

MANUFACTURING: Biological filters. (Water purification plant for urban area of Québec). Biodrof™ filters for surface beds. Biofor™ for submerged beds.

SALES/OTHER(S): Studies on pilot plants; design, manufacture setting-up and starting water treatment plants.

OTHER ACTIVITIES:

Ozonization process for pulp and paper making.

Treatment systems.

Studies on pilot plants; design, manufacture, setting up and starting water treatment plants.

AFFILIATIONS: Subsidiary of Degremont S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Robert Cyr, P.Eng., Technical Manager.

DENISON MINES LIMITED

HEAD OFFICE

**Royal Bank Plaza
Box 40, Suite 3000
Toronto, Ontario M8J 2K2**

Telephone: **(416) 865-1991**
Telex:
Fax: **(416) 865-0632**

President: **J.D. Fowler**

R & D Director: **P. Townsend, P.Eng.**
Telephone: **(705) 461-6214**

Employees: **1700**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

**Elliot Lake Operations
P.O. Box B2600
Elliot Lake, Ontario P5A 2K2**

Vice-President:
C.K. Bevner
General Manager:
F.P. Kerr

Telephone: **(705) 461-6200**

Founded: **1957**
Annual Sales: **\$30+M**
R & D Expenses: **\$0.5-1M**
(In biotechnology: **\$0.5-1M**)

PRINCIPAL ACTIVITIES: Mining and processing of uranium ore. Commercialization of yellowcake (U₃O₈) and Yttria oxide (Y₂O₃).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Several cooperative research contracts in the fields of bio-extractive metallurgy of uranium ore.

MANUFACTURING:

SALES/OTHER(S): Ongoing in-house research to extend and enhance the leaching process.

OTHER ACTIVITIES:

Research in conjunction with Canmet into the effects of backfill on stabilization of post pillows.

AFFILIATIONS: Several Provincial and Federal government cooperative research contracts, primarily in the fields of bioleaching technology and mining rockmass stability.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Any technology transfer or cooperative research which may enhance the competitive positions of lower grade uranium mining.

COMMENTS:

CONTACT PERSON: Manager of Engineering Services, Denison Mines, Elliot Lake, Ontario P5A 2K2.

DEXTRAN PRODUCTS LIMITED

HEAD OFFICE

#415-421 Comstock Road
Scarborough, Ontario M1L 2H5

RESEARCH FACILITY

Telephone: (416) 755-2231

Telex:

Fax: (416) 755-0334

President: George Usher

R & D Director:

Telephone:

Employees: 21

R & D Employees: 3

(In biotechnology: 2)

Founded:

1966

Annual Sales:

\$2.5M

R & D Expenses:

\$400K

(In biotechnology:

\$300K)

PRINCIPAL ACTIVITIES: Veterinary pharmaceuticals, tissue culture products, high performance liquid chromatography columns.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Production of substitutes for fetal bovine serum, and improving said substitutes. New HPLC products.

MANUFACTURING: Production of tissue culture media supplements. Production of high pressure liquid chromatography columns.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

Improved fermentation procedures for the production of dextran.

Production of veterinary products and dextran derivatives.

DIAGNOSTIC CHEMICALS LIMITED

HEAD OFFICE

**West Royalty Industrial Park
Charlottetown, Prince Edward Island C1E 1B0**

RESEARCH FACILITY

Telephone: (902) 566-1396
Telex: 014-44173
Fax: (902) 566-2498

Manufacturing Director:
Julien Gaudin

Telephone: (902) 566-1396

President: **J. Regis Duffy**

R & D Director: **Bill Herndon**
Telephone: (902) 566-1396

Founded: 1970
Annual Sales: \$1-3M
R & D Expenses: \$0-0.5M

Employees: 40
R & D Employees: 10

PRINCIPAL ACTIVITIES: Manufacturer of specialty chemicals, enzymes and diagnostic kits for the determination of various components in blood.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of immunodiagnostic procedures and kits using monoclonal and polyclonal antibodies.

MANUFACTURING: Isolation of a number of enzymes, i.e. peroxidase GLDH, urease, cholesterol esterase, etc. Production of immunodiagnostic reagents and kits.

SALES/OTHER(S):

AFFILIATIONS: DCL (USA), Monroe, Connecticut, U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON::

OTHER ACTIVITIES:

Manufacture of diagnostic kits for various components in blood, i.e., glucose cholesterol, etc. and research biochemicals.

DIVERSIFIED RESEARCH LABORATORIES LIMITED

(A Division of George Weston Limited)

HEAD OFFICE

**1047 Yonge Street
Toronto, Ontario M4W 2L2**

Telephone: **(416) 922-5100**
Telex: **065-28057**
Fax: **(416) 922-4318**

President:

R & D Director: **Dr. G.R. Lawford**
Telephone: **(416) 922-5100**

Employees: **95-100**
R & D Employees:

RESEARCH FACILITY

Same as Head Office

Founded: **1947**
Annual Sales: **N/A**
R & D Expenses: **\$3-5M**

PRINCIPAL ACTIVITIES: Research, development, consulting, and technical services for George Weston Limited as well as other companies on a contract basis.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fuel/Energy: Ethanol fermentations; Biomass conversions. Food: microbial lipids/biosurfactants; Single cell proteins. Chemicals: microbial Polysaccharides; Mycotoxins. Waste treatment / by-product utilization.

MANUFACTURING:

SALES/OTHER(S): Contract research, consulting, contract pilot scale fermentations/bioprocessing.

OTHER ACTIVITIES:

Food processing technologies.

AFFILIATIONS: Division of George Weston Limited; Partner in Bio-Hol Developments.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Dr. G. Ross Lawford

DOMINION BIOLOGICALS LIMITED

HEAD OFFICE

**179 Esplanade
Truro, Nova Scotia B2N 5G9**

Telephone: **(902) 895-2848**
Telex: **019-34581**
Fax: **(902) 468-3599**

President: **Sam Brushett**

R & D Director: **D. Dobbie**
Telephone: **(902) 895-1571 ext. 487**

Employees: **35**
R & D Employees: **8**
(In biotechnology: **6**)

RESEARCH FACILITY

**Cox Institute - NSAC
P.O. Box 1035
Truro, Nova Scotia B2N 5G9**

Manufacturing Director:
R. Townsend

Telephone: **(902) 893-7113**

Founded: **1972**
Annual Sales: **\$5-7M**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$1.2M**)

PRINCIPAL ACTIVITIES: Health - Human Diagnostics (Production of immunodiagnostic reagents and test systems).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Hybridoma research to produce monoclonal antibodies for use in "state-of-the-art" diagnostic systems.

MANUFACTURING: Monoclonal and polyclonal antibody-based reagents and test systems, for immunohematology and infectious disease diagnostics.

SALES/OTHER(S): Direct sales force in Canada and network of international distributors in Europe and Middle East.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Co-development of immunodiagnostic reagents and/or test systems for hematology, immunohematology and microbiology. Exclusive marketing and/or licensing of instrument-based diagnostic test systems.

COMMENTS:

CONTACT PERSON: Sam Brushett

OTHER ACTIVITIES:

DOMTAR INC.

HEAD OFFICE

**395, boulevard de Maisonneuve ouest
Montréal (Québec) H3R 1L6**

RESEARCH FACILITY

**C.P. 300
Senneville (Québec) H9X 3L7**

Telephone: **(514) 848-5400**
Telex:
Fax:

President: **J.H. Smith**

Vice-Pres. Research & Environmental Technology: **Dr. S.S. Danyluk**
Telephone: **(514) 457-6810**

Employees: **16,000**
R & D Employees: **135**

Founded: **1903**
Annual Sales: **\$30+M**
R & D Expenses: **\$10+M**

PRINCIPAL ACTIVITIES: Pulp and paper. Packaging. Construction Materials. Specialty chemicals. Research Centre.

BIOTECHNOLOGY ACTIVITIES: Research Centre

RESEARCH & DEVELOPMENT: Isolation, testing and cloning of specialized microorganisms for up-grading of natural resource base products, specialty chemicals, waste treatment.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

Research activities in pulp and paper, construction materials, salt, gypsum, organics, inorganic products and new process development.

Packaging; pulp and paper, including fine papers, newsprint and specialties, bleached pulp and lumber, gypsum board, roofing and laminates; salt, specialty chemicals, preserved wood products.

Oil and gas explorations product.

DU PONT CANADA INC.

HEAD OFFICE

**Box 2200 Streetsville
Mississauga, Ontario L5M 2H3**

RESEARCH FACILITY

Kingston, Ontario

Telephone: (416) 821-3300
Telex: 06-22304
Fax: (416) 821-5653

President: J.E. Newall

R & D Director: G.B. Dyer
Telephone: (613) 546-5330

Employees: 4,000
R & D Employees: 150 +

Founded: 1862
Annual Sales: \$1.3B
R & D Expenses: \$15+M

PRINCIPAL ACTIVITIES: Major producer of plastics, films, fibres; also produce chemicals and paints. Biotechnology is in funded R & D at universities.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Enzymes, membranes, etc.
University of Ottawa: insecticides. Queen's: tissue/wound healing.

MANUFACTURING:

SALES/OTHER(S): Supplier of reagents and instruments for biotechnology.

OTHER ACTIVITIES:

AFFILIATIONS: E.I. Dupont, Wilmington, Delaware (Parent Company).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint ventures, acquisitions, research partnerships.

COMMENTS: Resale supplier to health care, agriculture, forestry, food markets.

CONTACT PERSON: P.G. Hamilton, Director, Corporate Development.

ELANCO (Division of Eli Lilly Canada Inc.)

HEAD OFFICE

**3650 Danforth Avenue
Scarborough, Ontario M1N 2E8**

RESEARCH FACILITY

**#305 - 313 Consortium Court
London, Ontario N6E 2S8**

Telephone: **(416) 694-3221**
Telex:
Fax:

Manufacturing Director:
P. Winnett

Telephone: **(519) 681-5261**

President: **Arthur J. Benvenuto**

R & D Director: **Dr. Gerry F. McManus**
Telephone: **(519) 681-5261**

Employees: **30+**
R & D Employees: **7**

Founded: **1938**
Annual Sales: **\$16+M**
R & D Expenses: **\$~1M**

PRINCIPAL ACTIVITIES: Manufacture of animal health care products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Studies regarding three separate DNA compounds. Poultry: in-house trials. Experiments designed to support new product registration, and existing product supplemental registrations for animal health and agricultural chemical products.

MANUFACTURING: Finishing in Canada of animal health care products.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Canadian subsidiary of Eli Lilly and Company, Indianapolis, Indiana, U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Always interested in joint ventures and consortia.

COMMENTS:

CONTACT PERSON: **Dr. Gerry F. McManus**

ELITE SEED POTATO FARM

HEAD OFFICE

**R.R. #1, Alberton
Prince Edward Island, C0B 1B0**

RESEARCH FACILITY

Same as Head Office

Telephone: **(902) 853-2619**
Telex: **014-44198**
Fax: **(902) 566-4914**

Manufacturing Director:
Allan Parker

Telephone: **(902) 853-2619**

President: **Allan Parker**

R & D Director: **Norma Jean Lank**
Telephone: **(902) 853-2619**

Employees: **9**
R & D Employees: **2**

Founded: **1962**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Production of "nuclear" (basic seeds) stock of seed potatoes.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT:

MANUFACTURING: Rapid increase through tissue culture of numerous varieties of disease-free seed potato stocks.

SALES/OTHER(S):

AFFILIATIONS: Tissue Culture Association of Atlantic Canada.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exchange of information with others in the same field.

COMMENTS:

CONTACT PERSON: Allan Parker

ENDOGRO SYSTEMS INC.

HEAD OFFICE

**67 Eaglewood Drive
Bedford, Nova Scotia B4A 3B3**

Telephone: **(902) 835-9125**

Telex:

Fax:

President: **Sean Morrison**

R & D Director: **Sean Morrison**
Telephone: **(902) 424-3545**

Employees: **3**

R & D Employees: **3**

(All in biotechnology)

RESEARCH FACILITY

**Biology Department
Dalhousie University
Halifax, Nova Scotia B3H 4H6**

Founded: **1987**

Annual Sales: **N/A**

R & D Expenses: **\$0-0.5M**

(All in biotechnology)

PRINCIPAL ACTIVITIES: Developing technologies for the agricultural use of vesicular-arbuscular mycorrhizal fungi.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Developing technologies for the agricultural use of vesicular-arbuscular mycorrhizal fungi.**

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Atlantic Institute of Biotechnology.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint ventures with commercial interests in the agricultural industry.**

COMMENTS:

CONTACT PERSON: **Sean Morrison**

ENSCOR INC.

HEAD OFFICE

**156 Duncan Mill Road
Don Mills, Ontario M3B 3N2**

Telephone: **(416) 449-3535**
Telex:
Fax: **(416) 449-9887**

President: **Martin Simon**

R & D Director: **Dr. Samuel Asculai**
Telephone: **(416) 366-4863,**
Fax: **(416) 366-4892**

Employees: **50**
R & D Employees: **2**
(In biotechnology: **15 contractors**)

Founded: **1978**
Annual Sales: **\$30M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$200K**)

PRINCIPAL ACTIVITIES: Real estate development including residential, low and high rise apartment buildings. Biotechnology: pesticides for agriculture and forestry; pharmaceuticals for human health care - at universities.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fine chemicals; exotic mushrooms; ectomycorrhizal fungi; biofungicides - carried out at McGill and Laval Universities.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Research carried out at Laval and McGill Universities; The Rose Group; Tele-Radio Systems Limited; Syntex Inc., U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Partners for joint ventures.

COMMENTS:

CONTACT PERSON: Dr. S. Asculai

ENVIROCON PACIFIC LTD.

HEAD OFFICE

**#205 - 2250 Boundary Road
Burnaby, British Columbia V5M 3Z3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 291-0292**

Telex:

Fax: **(604) 291-2139**

President: **Bruce W. Jenkins**

R & D Director: **P. Ross Murray (Vice-Pres.)**

Telephone: **(604) 291-0292**

Employees: **52**

R & D Employees: **4**

Founded:

1971

Annual Sales:

\$1-3M

R & D Expenses:

\$0-0.5M

Manufacturing Director:

Glen O. Stewart (Vice-Pres.)

Telephone: **(604) 291-0292**

PRINCIPAL ACTIVITIES: Commercial smolt production and environmental resource consulting.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Genetics and broodstock development.**

MANUFACTURING: **Juvenile salmonids ("smolts").**

SALES/OTHER(S): **Smolts.**

AFFILIATIONS: **B.C. Salmon Farmers Association.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Aquaculture Development, Genetic Selection - national and international.**

COMMENTS:

CONTACT PERSON: **P. Ross Murray**

OTHER ACTIVITIES:

ENVIROMINE INC.

HEAD OFFICE

24, rue Viger
Beauport (Québec) G1B 1L4

RESEARCH FACILITY

2575, rue Watt, Suite 6
Sainte-Foy (Québec) G1P 3T2

Telephone: (418) 866-9430
Telex:
Fax:

President: André Paquet

R & D Director: Roger Guay, Ph.D.
Telephone: (418) 656-5795

Employees: 3
R & D Employees: 1

Founded: 1987
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Systems Development. Biodegradation of cyanides. Reclamation of mining sites.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Selection of bacterial strains. Development of bactericides. Biodegradation of toxic products.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Technological cooperation; technical feasibility; partnerships in some projects.

COMMENTS:

CONTACT PERSONS: Dr. Roger Guay, Département de microbiologie, Faculté de médecine de l'Université Laval, Sainte-Foy (Québec) G1K 7P4, Tel.: (418) 656-5795; Dr. Antoine Karan, Département des Soins, Université Laval, Tel.: (418) 696-2131, ext. 84.

OTHER ACTIVITIES:

ÉQUIPEMENT MONITEUR INC.

HEAD OFFICE

**445, boulevard Industriel
Saint-Eustache (Québec) J7R 5R3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 472-6620**

Telex:

Fax: **(514) 472-9294**

President: **Ervin Mak**

R & D Director: **Ervin Mak**

Telephone: **(514) 472-6620**

Employees: **22**

R & D Employees: **5**

(In Biotechnology: **5**)

Manufacturing Director:

Pierre R. Moffat

Telephone: **(514) 472-6620**

Founded: **1977**

Annual Sales: **\$1-3M**

R & D Expenses: **\$1M**

(In Biotechnology: **\$1M**)

PRINCIPAL ACTIVITIES: Distribution of diagnostics, and manufacture of blood serum analysers.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Blood serum analysers. Reagent kits for treatment of cancer, according to the FADU technique.

MANUFACTURING: Blood serum analysers. Reagent kits for the treatment of cancer, according to the FADU technique.

SALES/OTHER(S): Blood serum analysers. Reagent kits for the treatment of cancer, according to the FADU technique.

OTHER ACTIVITIES:

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exclusive distribution agreements (with a performance threshold) for specified areas.

COMMENTS:

CONTACT PERSON: Ervin Mak

ESSA - Environmental and Social Systems Analysts Ltd.

HEAD OFFICE

**P.O. Box 12155 - Nelson Square
#705 - 808 Nelson Street
Vancouver, British Columbia V6Z 2H2**

Telephone: **(604) 689-2912**
Telex:
Fax:

President: **Robert R. Everitt**

R & D Director: **David R. Marmorek**
Telephone: **(604) 689-2912**

Employees: **18**
R & D Employees: **15**
(In biotechnology: **15**)

RESEARCH FACILITY

Same as Head Office

Founded: **1979**
Annual Sales: **\$1-3M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

**PRINCIPAL ACTIVITIES: R & D in artificial intelligence, forestry science, fisheries science,
environmental science and acidic precipitation.**

BIOTECHNOLOGY ACTIVITIES:

**RESEARCH & DEVELOPMENT: Methods of predicting, monitoring
and screening environmental impacts of human activities.
Application of principles of systems ecology, adaptive
management, experimental design and expert systems to
resource management.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

**FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Cooperation with academic, industrial or
government agencies searching for innovative solutions to environmental and resource
management problems.**

COMMENTS:

CONTACT PERSONS: David R. Marmorek; Nicholas C. Sonntag.

OTHER ACTIVITIES:

EXPORT PACKERS COMPANY LIMITED

HEAD OFFICE

**250 Summerlea Road
Bramalea, Ontario L6T 3V6**

RESEARCH FACILITY

**70 Irene Street
Winnipeg, Manitoba R3T 4E1**

Telephone: **(416) 792-9700**
Telex: **069-88533**
Fax: **(416) 792-7421**

Manufacturing Director:
Leslie Carvalho

President: **John Hoberg Lee**

Telephone: **(204) 477-1830**
Telex: **07-587641 (Winnipeg)**

R & D Director: **Leslie Carvalho**
Telephone: **(204) 477-1830**
Fax: **(204) 475-7740**

Employees: **100**
R & D Employees: **8**
(In biotechnology: **8**)

Founded: **1973**
Annual Sales:
R & D Expenses: **\$1-3M**
(In biotechnology: **\$1-3M**)

PRINCIPAL ACTIVITIES: Egg processing and biochemical manufacturing.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Enzymes; egg products; filtration systems, waste processing.**

MANUFACTURING: **Egg products, enzymes, biochemicals.**

SALES/OTHER(S): **Analytical.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Leslie Carvalho**

FALCONBRIDGE LIMITED

HEAD OFFICE

Box 40, Commerce Court West
Toronto, Ontario M5L 1B4

RESEARCH FACILITY

Falconbridge, Ontario P0M 1S0
c/o R.E. Michelutti

Telephone: (705) 693-2761 (Falconbridge, Ontario)
Telex: 067-7194
Fax: (705) 566-2107

President: W. James
(416) 863-7000
R & D Director: L. Seeley
Telephone: (705) 693-2761

Employees: 2,600
R & D Employees: 40

Founded: 1928
Annual Sales: \$1,000+M
R & D Expenses: \$6M

PRINCIPAL ACTIVITIES: Base metals: nickel, copper, cobalt, zinc.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Use of bacteriocides to reduce acid generation of wasterock. Use of bacteria to remove heavy metal contamination in waste streams. Use of aquatic systems to polish effluents and to prevent acid generation on tailings.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: This is a base metal operation - R & D is primarily directed to improving metallurgy - minimum R & D performed on biotech in pollution-related work.

CONTACT PERSON: R. Michelutti, Supervisor Envr. Cont., Falconbridge Ltd., Falconbridge, Ontario P0M 1S0.

OTHER ACTIVITIES:

FERMTECH R & D INC.

HEAD OFFICE

**2383 Edenhurst Drive
Mississauga, Ontario L5A 2L1**

Telephone: **(416) 279-5337**
Telex:
Fax:

President: **Dr. Hugh G. Lawford**

R & D Director: **Dr. Hugh G. Lawford**
Telephone: **(416) 978-7096**

Employees: **4**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Dr. Ignace Krizancic

Telephone: **(416) 923-0912**

Founded: **1983**
Annual Sales: **N/A**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$30-40K - 86-87**)

PRINCIPAL ACTIVITIES: **Bioprocesses for food/agriculture and alternative energy (fuel alcohol). Production of "microbial inoculants" (starter cultures, silage inoculants, feed additives "probiotics". Fermentation technologies (specializing in continuous fermentations).**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Fermentation processes (specializing in continuous systems).**

MANUFACTURING: **Microbial inoculants, silage inoculants, probiotic feed additives, cultures for fuel alcohol industry.**

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **Biosystech Consulting Inc. (Mississauga).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint venture in marketing.**

COMMENTS:

CONTACT PERSON: **Dr. H. G. Lawford**

FMG INTEGRATED BIOTECHNICAL LABORATORIES LTD.

HEAD OFFICE

#214 - 7080 River Road
Richmond, British Columbia V6X 1X5

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 273-7157
Telex:
Fax:

President: Dr. Kirk Maltman

R & D Director: Dr. S.H. Goh
Telephone: (604) 273-7157

Employees: 3
R & D Employees: 2.5
(In biotechnology: 2.5)

Founded: 1984
Annual Sales: N/A
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Molecular biology and diagnostics.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fish biology, aquaculture, diagnostics: rDNA gene probes and polyclonal antibodies. R & D for improved species carried out in-house and with Fisheries and Oceans Canada.

MANUFACTURING: DNA.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Not at present.

COMMENTS:

CONTACT PERSON: Dr. Goh

OTHER ACTIVITIES:

FORINTEK CANADA CORP.

HEAD OFFICE

**6620 North West Marine Drive
Vancouver, British Columbia V6T 1X2**

Telephone: **(604) 224-3221**
Telex: **04-508552**
Fax: **(604) 224-3229**

President: **K.A. French**

R & D Director: **Dr. J.A. Dangerfield**
Telephone: **(604) 224-3221**

Employees: **198**
R & D Employees: **139**
(In biotechnology: **20**)

RESEARCH FACILITY

**800 Montreal Road
Ottawa, Ontario K1G 3Z5**

Telephone: **(613) 744-0963**
Telex: **053-3606**

Founded: **1979**
Annual Sales: **N/A**
R & D Expenses: **\$7-10M**
(In biotechnology: **\$1.8M**)

PRINCIPAL ACTIVITIES: R & D for Canada's wood products industries.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fuels and chemicals from forest biomass. Novel products from biomass lignin. Enzyme production for cellulose related products. Control of stain and decay organisms.

MANUFACTURING:

SALES/OTHER(S): Maintenance of a wood-destroying fungal collection.

OTHER ACTIVITIES:

Broadly-based program of research in wood products in the areas of:

- Resource characterization;
- Lumber manufacturing;
- Composite manufacturing;
- Engineering and fire performance properties of wood products;
- Building construction technology;
- Wood protection and wood preservation.

AFFILIATIONS: Private, non-profit research corporation to support the wood products industries in Canada.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Partnerships to support the commercialization of technology developed in the R & D program.

COMMENTS:

CONTACT PERSON: Dr. J. Saddler, 800 Montreal Road, Ottawa, Ontario K1G 3Z5, Tel.: (613) 744-0963, Telex: 053-3606.

FRAPPIER DIAGNOSTIC INC.

HEAD OFFICE

**527, boulevard des Prairies
Laval (Québec) H7N 4Z9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 687-5010**
Telex: **055-62171**
Fax: **(514) 687-5010**

Manufacturing Director:
Robert Gareau

Telephone: **(514) 687-5010**

Vice-President (scientific): **Dr. Claude Vezina**

R & D Director: **Hélène Gagné**
Telephone: **(514) 687-5010 ext. 410**

Employees: **80**
R & D Employees: **4**

Founded: **1978**
Annual Sales: **\$5-7M**
R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: **Production of diagnostic reagents for human and animal infectious diseases.**

BIOTECHNOLOGY ACTIVITIES:	OTHER ACTIVITIES:
<u>RESEARCH & DEVELOPMENT:</u> Diagnostic reagents based on monoclonal antibodies. <u>MANUFACTURING:</u> Diagnostic reagents. <u>SALES/OTHER(S):</u> <u>AFFILIATIONS:</u> Institut Armand Frappier. <u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> <u>COMMENTS:</u> <u>CONTACT PERSON:</u>	

GELDA SCIENTIFIC AND INDUSTRIAL DEVELOPMENT CORP.

HEAD OFFICE

**5266 General Road, Suite 8
Mississauga, Ontario L4W 1Z7**

Telephone: **(416) 624-2779**
Telex: **085-2821 MSGA**
Fax: **(416) 624-2469**

President: **Dr. Charter Sen Gelda**

R & D Director: **Dave D. Sharma**
Telephone: **(416) 624-2779**

Employees: **8**
R & D Employees: **4**
(In biotechnology: **4**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Latika Mogla

Telephone: **(416) 624-2779**

Founded: **1979**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Technology development.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Fermented dairy products, animal feed supplements, aseptic systems, industrial enzymes.**

MANUFACTURING: **BIFIDO products.**

SALES/OTHER(S): **Biochemical products. Food products. Consulting to small and medium size companies in the area of R & D. Lab services - chemical and microbiological.**

OTHER ACTIVITIES:

AFFILIATIONS: **Universities (Toronto, Manitoba, McMaster, Guelph).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: **The company sponsors university research in the area of beneficial health effects of Bifido bacteria.**

CONTACT PERSONS: **Dr. Gelda; Kesh Gelda.**

GEMINI BIOCHEMICAL RESEARCH LTD.

HEAD OFFICE

#350-4520 16th Avenue North West
Calgary, Alberta T3B 0M6

RESEARCH FACILITY

Same as Head Office

Telephone: (403) 288-7771
Telex:
Fax:

President: Dr. I. Forrester

R & D Director: Dr. I. Forrester
Telephone: (403) 288-7771

Employees: 3
R & D Employees: 3
(in biotechnology: 3)

Founded: 1981
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(in biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: Contract research in biotechnology, applied chemistry and environmental science.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Methane oxidizing bacteria, biopesticides, polymers, bioreactors.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint venture, licensing agreement or contract research.

COMMENTS:

CONTACT PERSON: Dr. Ian Forrester

OTHER ACTIVITIES:

GENDRON LEFEBVRE

HEAD OFFICE

**2, Place Laval
Laval (Québec) H7N 5N6**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 384-1260**
Telex: **05-25469**
Fax: **(514) 629-8737**

Technical Director, Environment:
Claude Vallée

Telephone: **(514) 384-1260**

President: **Claude F. Lefebvre**

R & D Director, Environment: **M. Prévost**
Telephone: **(514) 384-1260**

Employees: **250**
R & D Employees: **6**

Founded: **1957**
Annual Sales: **\$10-15M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: **Engineering consultation for environment, surveying, urban planning, geomantics, transportation and project management.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Biotreatment of wastewaters and drinking water. Industrial and agricultural waste treatment. Automation of methods of analysis.**

MANUFACTURING: **Biosensors and probes.**

SALES/OTHER(S): **Feasibility studies and demonstration of new processes. Development of biosensors and probes.**

AFFILIATIONS: **WPCF; AQTE; AWWA (Environment).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Partnership with Canadian and foreign universities and the Canadian Center for Biotechnology.**

COMMENTS: **Our company carries out research in cooperation with École Polytechnique de Montréal; Institut Armand Frappier; INRS (Institut National de la Recherche Scientifique).**

CONTACT PERSON: **Mrs. Michèle Prévost**

OTHER ACTIVITIES:

**Land surveying;
Geomantics;
Urban and regional planning;
Environmental, sanitary and urban engineering;
Transportation, public works project and construction management.**

GIANT BAY RESOURCES LTD.

HEAD OFFICE

**#107F, Discovery Park
3700 Gilmore Way
Burnaby, British Columbia V5G 4M1**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 434-6344**

Telex:

Fax: **(604) 434-9320**

President: **Claus Jensen**

R & D Director: **Ralph P. Hackl**

Telephone: **(604) 434-6344**

Employees: **11**

R & D Employees: **6**

(In biotechnology: **6**)

Founded: **1983**

Annual Sales: **\$0-1M**

R & D Expenses: **\$1-3M**

(In biotechnology since inception: **\$3.5M**)

PRINCIPAL ACTIVITIES: (Mineral Leaching). Use of microorganisms to aid in the recovery of metals from ores and waste products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of processes in which sulphide-oxidizing bacteria are used to enhance recovery of gold and silver from refractory ores.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Joint venture company: International Biotech Inc., (IBI) Burnaby.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Ralph P. Hackl

GORE & STORRIE LTD.

HEAD OFFICE

**1670 Bayview Avenue
Toronto, Ontario M4G 3C2**

Telephone: **(416) 485-7715**
Telex: **06-23283**
Fax: **(416) 485-0014**

President: **R.A. Goodings, P.Eng.**

R & D Director: **S.A. Black, P.Eng.**
Telephone: **(416) 485-7715**

Employees: **250**
R & D Employees: **10**
(In biotechnology: **4**)

RESEARCH FACILITY

**Same as Head Office and
55 Research Road
Toronto, Ontario**

Founded: **1919**
Annual Sales: **\$15-20M (Income)**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0.2M**)

PRINCIPAL ACTIVITIES: Consulting Engineers: wastewater treatment, characterization, process development. Water supply and distribution, waste management, EFW.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Aerobic and anaerobic treatability and pilot plant studies for municipal and industrial wastes and wastewaters.

MANUFACTURING:

SALES/OTHER(S): Systems design and construction, plant start-up, training, operations assistance and troubleshooting.

OTHER ACTIVITIES:

Physical/chemical treatability studies.

Municipal and industrial water and wastewater systems design.

AFFILIATIONS: GS Processes, Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Anaerobic treatment of food processing wastes, landfill leachates and high strength chemical wastes. Canada, U.S.A. and Europe.

COMMENTS: One of the largest environmental engineering design firms in Canada.

CONTACT PERSON: John A. Stephenson, Tel.: (416) 485-7715.

THE GRIFFITH LABORATORIES LIMITED

HEAD OFFICE

757 Pharmacy Avenue
Scarborough, Ontario M1L 3J8

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 288-3050
Telex: 06-963562
Fax: (416) 288-3481

Vice-President, Operations:
E. Vegter

Telephone: (416) 288-3403

President: David H. Lees, Ph.D.

R & D Director: Dr. John Holme
Telephone: (416) 288-3330

Employees: 500
R & D Employees: 40

Founded: 1919
Annual Sales: \$30+M
R & D Expenses: \$1-3M

PRINCIPAL ACTIVITIES: Food product manufacturing and sale.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Fermentation processes in baking;
enzymology in flavour development.

MANUFACTURING: Applied from research.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

HARA PRODUCTS LTD.

HEAD OFFICE

P.O. Box 134

Swift Current, Saskatchewan S9H 3V5

RESEARCH FACILITY

Same as Head Office

Telephone: **(306) 773-2131**

Telex:

Fax:

(306) 773-0066

President:

A.F. (Tony) Juffinger

Manufacturing Director:

Ron Juffinger

Telephone: **(306) 773-2131**

R & D Director:

Telephone:

Employees: **16**

R & D Employees: **1**

Founded:

1968

Annual Sales:

\$0-1M

R & D Expenses:

\$0-0.5M

PRINCIPAL ACTIVITIES: **Plastics manufacturing.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT:

MANUFACTURING: **Hara insect traps for pheromone bait to monitor selective insect infestation.**

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

HELIX BIOTECH LTD.

HEAD OFFICE

**215-7080 River Road
Richmond, British Columbia V6X 1X5**

RESEARCH FACILITY

Telephone: **(604) 270-7468**

Telex:

Fax: **(604) 270-8208**

President: **Terrance G. Owen, Ph.D.**

R & D Director:

Telephone:

Employees: **10**

R & D Employees: **4**

Founded: **1980**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0-0.5M.**

PRINCIPAL ACTIVITIES: **Biochemical manufacturing, contract research and development.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Veterinary and clinical diagnostic systems.**

MANUFACTURING: **Purification of rare proteins, enzyme-antibody conjugates and diagnostic systems.**

SALES/OTHER(S): **Genetic analysis of marine fish populations.**

AFFILIATIONS: **Joldon Diagnostics, Toronto, Ontario.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Seeks both Canadian and international collaborations.**

COMMENTS: **Helix is Canada's most experienced company in the purification of rare, clinically important proteins and in the development of novel immunoassay systems.**

CONTACT PERSON:

OTHER ACTIVITIES:

Marketing of chemical standards for pulp and paper research.

HYBRISENS LTD.

HEAD OFFICE

**4700 Keele Street
(York University Campus)
Farquharson Building, Suite 104
Toronto, Ontario M3J 1P3**

Telephone: (416) 736-5504
Telex:
Fax: (416) 736-5594

President: Dr. E.Y. Shami

R & D Director: Dr. E.Y. Shami
Telephone:

Employees: 5
R & D Employees: 4
(In biotechnology: 4)

Founded: 1986
Annual Sales: N/A
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: R & D in biotechnology.

RESEARCH FACILITY

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Stabilization of industrial enzymes, hormones, growth factors, custom monoclonal antibodies service.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: R & D contracts to stabilize biological active compounds and custom monoclonal antibodies production.

COMMENTS:

CONTACT PERSON: Dr. Ezekiel Shami

OTHER ACTIVITIES:

HYPERCUBE INC.

HEAD OFFICE

**16 Blenheim Road
Cambridge, Ontario N1S 1E8**

RESEARCH FACILITY

Same as Head Office

Telephone: **(519) 622-0260**
Telex:
Fax:

President: **John Unsworth**
Chairman and C.E.O.: **Neil Ostlund**
R & D Director: **Neil Ostlund**
Telephone: **(519) 622-0260**

Employees: **7**
R & D Employees: **5**

Founded: **1985**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Development of hardware and software for molecular modeling of drug and biologically interesting molecules, using parallel computers.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Simulation of proteins and nucleic acids for the pharmaceutical and biotechnical industries.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

INRAD INDUSTRIAL RESEARCH & DEVELOPMENT, LTD.

HEAD OFFICE

**128 Adelaide Street
Winnipeg, Manitoba R3A 0W5**

RESEARCH FACILITY

Same as Head Office

Telephone: **(204) 943-6870**
Telex:
Fax:

President: **Edward A. Speers, P.Eng.**

R & D Director: **Edward A. Speers, P.Eng.**
Telephone: **(204) 943-6870**

Employees: **4**
R & D Employees: **3**
(In biotechnology: **2**)

Founded: **1975**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$15K**)

PRINCIPAL ACTIVITIES: **Plant/tree strain improvement and development.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Micropropagation and species development in gymnosperms and orchidaceae.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Edward A. Speers, P.Eng.**

OTHER ACTIVITIES:

INSTITUTE FOR CHEMICAL SCIENCE AND TECHNOLOGY (ICST)

HEAD OFFICE

**P.O. Box 2712
Sarnia, Ontario N7T 7V9**

Telephone:
Telex:
Fax:

Chairman: **J.M. Hay (Vice-Pres. - Dow Chemical Company)**

Director and C.E.O.: **W.R. Stadelman**
Telephone: **(416) 425-4126**

Employees:
R & D Employees:
(In biotechnology: **12 - in universities**)

Founded: **1985**
Annual Sales: **N/A**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$250K**)

PRINCIPAL ACTIVITIES: **Support of precompetitive research of interest to the Canadian chemical, petrochemical and petroleum processing industries.**

ADMINISTRATIVE OFFICE

**31 Rykert Crescent
Toronto, Ontario M4G 2T1**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Removal of organic contaminants from wastewaters by immobilized enzymes. Industrial waste management by enhanced land treatment.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Will consider cooperative programs with other Canadian groups.**

COMMENTS: **ICST is an institute established to support precompetitive research of interest to its industrial members at Canadian Universities.**

CONTACT PERSON: **W.R. Stadelman, Director.**

OTHER ACTIVITIES:

Research relating to chemical and petroleum processing industries.

IOGEN CORPORATION

<u>HEAD OFFICE</u> 3870, Côte Vertu St-Laurent (Québec)		<u>RESEARCH FACILITY</u> 400 Hunt Club Road Ottawa, Ontario K1G 3N3	
Telephone: (514) 332-8430 Telex: 05-824652 Fax:		Manufacturing Director: Alan Belcher Telephone: (613) 733-9830	
President: Brian Foody			
R & D Director: Brian Foody Telephone: (613) 733-9830 Fax: (613) 733-5127			
Employees: 25 R & D Employees: 20 (In biotechnology: 20)		Founded: 1986 Annual Sales: \$1-3M R & D Expenses: \$1-3M (In biotechnology: \$1-3M)	
PRINCIPAL ACTIVITIES: Conversion of renewable resources to food, energy, and specialty chemical products.			
<u>BIOTECHNOLOGY ACTIVITIES:</u>		<u>OTHER ACTIVITIES:</u>	
<u>RESEARCH & DEVELOPMENT:</u> Chemical and alternate energy (enzymes, chemical specialties, bulk chemicals), forestry (new products, breakdown of cellulose and lignin), food and beverage (new products). <u>MANUFACTURING:</u> \$5.3 million pilot facility. <u>SALES/OTHER(S):</u> <u>AFFILIATIONS:</u> Techtrol Ltd.; Monenco Ltd. <u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> <u>COMMENTS:</u> <u>CONTACT PERSON:</u> Brian Foody, 400 Hunt Club Road, Ottawa, Ontario K1G 3N3.			

JOLDON DIAGNOSTICS

HEAD OFFICE

**81 Finchdene Square
Scarborough, Ontario M1X 1B4**

RESEARCH FACILITY

Telephone: **(416) 292-1699**
Telex:
Fax:

President: **Dr. D. Segal**

R & D Director:
Telephone:

Employees: **11**
R & D Employees: **2**

Founded: **1980**
Annual Sales: **N/A**
R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: **Manufacture and sale of diagnostic kits.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Immunoassay kits.**

MANUFACTURING: **Immunoassay kits.**

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint venture(s), technology exchange.**

COMMENTS:

CONTACT PERSON: **Dr. D. Segal**

KEMIC BIORESEARCH LABORATORIES LTD.

HEAD OFFICE

70 Exhibition Street
P.O. Box 878
Kentville, Nova Scotia B4N 4H8

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 678-8195
Telex:
Fax:

President: Dr. Peter W. Mullen

R & D Director: Dr. Peter W. Mullen
Telephone: (902) 678-8195

Employees: 5
R & D Employees: 3

Founded: 1980
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Contract biomedical research, testing and consulting in: pharmacokinetics, toxicology. Conference organization and specialized training courses.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Drug and pollutant assay kits.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Will consider any relevant joint venture arrangement.

CONTACT PERSON: Dr. Peter W. Mullen

KILBORN (SASKATCHEWAN) LTD.

HEAD OFFICE

**357 Third Avenue South
Saskatoon, Saskatchewan S7K 1M6**

RESEARCH FACILITY

Telephone: (306) 664-2226
Telex: 074-2630
Fax: (306) 652-3235

General Manager: **E.H. Bassett**

R & D Director: **D.G. Malcolm, Ph.D., P.Eng.**
Telephone:

Employees: 150
R & D Employees: 10

Founded: 1947
Annual Sales: \$7-10M
R & D Expenses: \$0-0.5M

**PRINCIPAL ACTIVITIES: Engineering, management consulting, construction services,
R & D, operation research.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Process development in biomass fermentation, e.g., banana fermentation to produce ethanol and animal feed.

MANUFACTURING:

SALES/OTHER(S): Technology transfer activities re improved ethanol fermentation processes.

AFFILIATIONS: Kilborn Engineering.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint ventures and/or licensing arrangements.

COMMENTS: Kilborn concentrates on filling the facilitator role in technology transfer from universities and institutes to industry.

CONTACT PERSON: D.G. Malcolm, Manager of Market Development.

OTHER ACTIVITIES:

MHD control of semi-conductor crystal growth. Artificial intelligence in process control and in mining and metallurgy. Graphics animation.

KING AGRO

HEAD OFFICE

**P.O. Box 1088
Chatham, Ontario N7M 5L6**

RESEARCH FACILITY

**Same as Head Office
and Listowel, Ontario**

Telephone: (519) 354-3210
Telex: 78548
Fax: (519) 354-8155

Manufacturing Director:
Leo Marion

Telephone: (519) 354-3210

President: **Paul A. King**

R & D Director: **Frank Scott-Pearse**
Telephone: (519) 354-3210

Employees: 120
R & D Employees: 23

Founded: 1934
Annual Sales: \$15-30M
R & D Expenses: \$1-3M

PRINCIPAL ACTIVITIES: **Seed production and sale.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Routine use of microspore culture in rapeseed breeding program.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Breeding corn, soybeans, wheat, barley, oats.

Seed production - hybrid corn, soys, cereals.

Sales of seed, silage inoculant.

AFFILIATIONS: King Grain; Kinggroup Inc.; King Grain Inc.; King Grain Limited; France Canada Semences S.A.; Sanofi Inc.; Rustica Semences; Daulgren & Co.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

J.D. KOPPERNAES ENGINEERING LTD.

HEAD OFFICE

1248 Bedford Highway
Bedford, Nova Scotia B4A 1W4

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 835-8348
Telex: 019-21669
Fax: (902) 835-0134

President: Peter Mitchell

R & D Director: Peter Mitchell
Telephone: (902) 835-8348

Employees: 9
R & D Employees: 4
(In biotechnology: 2)

Founded:
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$10K)

PRINCIPAL ACTIVITIES: Food plant design, dairies, fish processing plants, waterfront designs, plant feasibility and economic impact studies.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Treatment of effluent from fish, dairy and cheese plants using a mobile anaerobic digester.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Design for fisheries complexes:

Louisbourg, Boston, Chetivamp, Nova Scotia, New Brunswick, Prince Edward Island, Lunenburg, Nassau, St. Lucia, Barbados.

R & D in composite material products and machines.

Research on dried fish solubles, fish protein concentrates, ensilage of fish wastes.

AFFILIATIONS: American Composite Technology Inc., Boston; General Composite Technology; Advanced Materials Engineering Centre.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Peter Mitchell

LABATT BREWING COMPANY LTD.

HEAD OFFICE

**150 Simcoe Street
London, Ontario N6A 4M3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(519) 663-5050**
Telex: **064-7244**
Fax: **(519) 667-7304**

President: **S.M. Oland**

R & D Director: **Dr. G.G. Stewart**
Telephone: **(519) 667-7339**

Employees: **4,600**
R & D Employees: **38**
(In biotechnology: **36**)

Founded: **1847**
Annual Sales: **\$1.8 Billion**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$2M**)

PRINCIPAL ACTIVITIES: Manufacture of malt-based beverages.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Research on fermentation, yeast, flavours and flavour stability.**

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Manufacture of malt-based beverages.

Manufacture of malt-based beverages.

AFFILIATIONS: Hold associate laboratory status with National Research Council, Biotechnology Research Institute, Montreal.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Labatt Brewing Co. is a wholly owned subsidiary of John Labatt Limited which is a broadly-based food and beverage processing corporation with annual sales of \$5 billion.

CONTACT PERSON: Dr. G.G. Stewart

LALLEMAND INC.

HEAD OFFICE

1620, rue Préfontaine
Montréal (Québec) H1W 2N8

Telephone: (514) 522-2133
Telex: 05-24824
Fax: (514) 522-2884

President: Jean Chagnon

R & D Director: Richard Degré
Telephone: (514) 522-2133

Employees: 100
R & D Employees: 7

RESEARCH FACILITY

Same as Head Office and
Biotechnology Research
Institute (NRCC, Montréal)

Vice-President, Production:
Guy Marleau

Telephone: (514) 522-2133

Founded: 1917
Annual Sales: \$15-30M
R & D Expenses: \$0.5-1M

PRINCIPAL ACTIVITIES: Production of yeasts for bread-making. Wine-making. Distillation.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fermentation and downstream processing. Fermentation control.

MANUFACTURING: Fermentation and downstream processing. Fermentation control.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Richard Degré

OTHER ACTIVITIES:

P. LANE AND ASSOCIATES LIMITED

HEAD OFFICE

1046 Barrington Street
Halifax, Nova Scotia B3H 2R1

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 423-8197
Telex: 019-21745
Fax: (902) 429-9177

President: Dr. P. Lane

R & D Director: F. Meth
Telephone: (902) 423-8197

Employees: 12
R & D Employees: 2

Founded: 1984
Annual Sales: \$1-3M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Environmental studies and impact assessment, risk analysis, biotechnology applications in environmental clean up problems of heavy metals and organic compounds. Aquaculture.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Wastewater treatment processes. PAH clean up in soil and water (microbiological and other methods). Bioaccumulation of heavy metals in aquatic macrophytes. Toxicological modelling with associated field and laboratory studies. Aquaculture: shellfish and finfish.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Jacques Whitford and Associates Limited, Halifax, Nova Scotia; Environmental Structure and Design Limited, Charlottetown, Prince Edward Island.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Cooperation with new technologies and products (e.g. consortia of bacteria) both nationally and internationally.

COMMENTS:

CONTACT PERSON: Dr. P. Lane

LANGFORD INC.

HEAD OFFICE

400 Michener Road
Guelph, Ontario N1K 1E4

RESEARCH FACILITY

131 Malcolm Road
Guelph, Ontario N1K 1A8

Telephone: (519) 837-2040
Telex: 069-56673
Fax: (519) 837-1876

Manufacturing Director:
Dr. C.G. Boylan

Telephone: (519) 837-2040

President: Dr. R.C. Povey

R & D Director: Dr. M. Maxwell
Telephone: (519) 823-5490

Founded: 1977
Annual Sales: N/A
R & D Expenses: N/A

Employees: 55
R & D Employees: 6
(In biotechnology: 6)

PRINCIPAL ACTIVITIES: Animal health products: Production and marketing.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Animal vaccines.

MANUFACTURING: Animal vaccines.

SALES/OTHER(S): Animal vaccines, animal pharmaceuticals,
animal diagnostics.

AFFILIATIONS: Cyanamid Canada Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint development, technology licensing
either way, sales representation either way.

COMMENTS:

CONTACT PERSONS: Dr. R.C. Povey, President; M. Warnellink, Director of Marketing.

A. LASSONDE & FILS INC.

HEAD OFFICE

**170, 5^e avenue
Rougemont (Québec) J0L 1M0**

RESEARCH FACILITY

**705, rue Principale
Rougemont (Québec) J0L 1M0**

Telephone: **(514) 878-1057**
Telex: **05-832553**
Fax:

Manufacturing Director:
Richard Morin

Telephone: **(514) 878-1057**

President: **Jean Paul Barré**

R & D Director: **Yves Dumont**
Telephone: **(514) 878-1057**

Employees: **204**
R & D Employees: **9**

Founded: **1918**
Annual Sales: **\$30+M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Production and canning of fruit juices and other food products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Enzymatic clarification of fruit juices.**

MANUFACTURING: **Continuous process of fruit juice clarification.**

SALES/OTHER(S): **Technology and consulting re: the processes of fruit juice production.**

OTHER ACTIVITIES:

Development of food products. Formulation and adjustment of processes of food preservation.

AFFILIATIONS: **Lassonde Technologie Inc. (Canada).**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Yves Dumont, Vice-President, R & D.**

MACMILLAN BLOEDEL LIMITED

HEAD OFFICE

**1075 West Georgia
Vancouver, British Columbia V6E 3R9**

Telephone: (604) 661-8000
Telex:
Fax:

President: **R.V. Smith**

R & D Director: **Dr. O.L. Forgas**
Telephone: **(604) 661-8499**

Employees: **15 300**
R & D Employees: **140**

RESEARCH FACILITY

**MacMillan Bloedel Research
3350 East Broadway
Vancouver, British Columbia
V5M 4E6**

Telephone: **(604) 254-5151**
Fax: **(604) 251-6229**

Founded: **1911**
Annual Sales: **30+M\$**
R & D Expenses: **10+M\$**

PRINCIPAL ACTIVITIES: Integrated forest products manufacturing including lumber, panelboards, bleached and unbleached kraft pulp, container-board, groundwood specialty printing papers and newsprint.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Bacterial anaerobic digestion.
Sylviculture: seedling propagation using vegetative methods.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSONS: Dr. A.R. Procter, MacMillan Bloedel Research for product and process, Vancouver, B.C.; Dr. W.W. Bourgeois at Woodlands Services in Nanaimo, B.C., for sylviculture matters.

OTHER ACTIVITIES:

Products and process development for the above-named products including woodscience, sylviculture, applied physics and chemistry, electronics and metallurgical disciplines.

FRANK MAINE CONSULTING LTD.

HEAD OFFICE

**71 Sherwood Drive
Guelph, Ontario N1E 6E6**

RESEARCH FACILITY

Telephone: **(519) 823-1485**
Telex:
Fax:

President: **Dr. F.W. Maine**

R & D Director: **Dr. E. Mason**
Telephone: **(519) 823-1485**

Employees: **4**
R & D Employees: **2**

Founded: **1979**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Consulting.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Chemicals from peat. Mushroom technology.**

MANUFACTURING:

SALES/OTHER(S): **Consulting.**

OTHER ACTIVITIES:

AFFILIATIONS: **CRMA - Canadian Research Managers Association; SPI - Society of the Plastics Industry of Canada; SPE - Society of Plastics Engineers; APEO - Association of Professional Engineers of Ontario; CIC - Chemical Institute of Canada.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. F.W. Maine**

MANN TESTING LABORATORIES LTD.

HEAD OFFICE

**5550 McAdam Road
Mississauga, Ontario L4Z 1P1**

RESEARCH FACILITY

Telephone: (416) 890-2555
Telex: 06-960496
Fax: (416) 890-0370

President: John Martin

R & D Director: Dr. Pierre Beaumier
Telephone: (416) 890-2555

Employees: 100
R & D Employees:

Founded: 1972
Annual Sales: N/A
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Analytical testing in forensic science, occupational health and safety, environmental chemicals and inorganic chemistry.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development and evaluation of immunoassay methods for detection of drug and environmental organics.

MANUFACTURING: Production of antibodies directed toward drugs used in horse racing industry.

SALES/OTHER(S): Sales and marketing of immunoassay-based technology for drug and environmental contaminant detection.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Currently involved in joint projects with Canadian universities concerning both biotechnology-based and classical analytical chemistry.

CONTACT PERSON:

OTHER ACTIVITIES:

Robotic method development for custom analytical application. Trace level organic analysis development. Customized software applications. Development of new analytical techniques for drug detection in the equine.

Microprocessor-based air sampling devices for indoor and outdoor use. Pre-employment drug screening. Comprehensive drug screening of race, equestrian and other show horses. Pesticide and herbicide analysis. Complete environmental and occupational health monitoring.

MARBICON INC.

HEAD OFFICE

**P.O. Box 900
Berwick, Nova Scotia B0P 1E0**

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 538-7101
Telex:
Fax: (902) 679-1170

President: **Jim Jotcham**

R & D Director: **Jim Jotcham**
Telephone: (902) 538-7101

Employees: 5
R & D Employees: 5
(In biotechnology: 5)

Founded: 1984
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$120K)

PRINCIPAL ACTIVITIES: Pesticide screening. Environmental impact studies. Plant tissue culture.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Developing herbicide-resistant plant strains via plant tissue culture.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Pesticide screening, bioassay for plant susceptibility and herbicide persistence.

Environmental impact studies.

AFFILIATIONS: Cooperative Research with Micro Elite Plant Laboratories Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Jim Jotcham

D. McLEAY AND ASSOCIATES LTD.

HEAD OFFICE

#300 - 1497 Marine Drive
West Vancouver, British Columbia V7T 1B8

RESEARCH FACILITY

B.C. Research:
3650 Westbrook Mall
Vancouver, British Columbia
V6S 2L2

Telephone: (604) 922-0355

Telex:

Fax: (604) 925-1430

President: Dr. Don McLeay

R & D Director: Dr. Don McLeay

Telephone: (604) 922-0355

Employees: 2

R & D Employees: 1

Founded: 1981

Annual Sales: \$0-1M

R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Aquaculture and aquatic toxicological R & D.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Aquaculture: efficacy testing for vaccines and pharmaceuticals to be evaluated for use with farmed fish and shellfish. Biotesting techniques for assessing physiological condition of fish and shellfish.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: B.C. Research; Mae West Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Consideration for Canadian and international research projects, here or abroad.

COMMENTS:

CONTACT PERSON: Dr. Don McLeay

OTHER ACTIVITIES:

Aquatic Toxicology: evaluation of the aquatic hazards of chemicals and effluents, using a battery of lethal and sublethal toxicity tests with fish and aquatic invertebra.

MDS HEALTH GROUP LIMITED

HEAD OFFICE

**100 International Boulevard
Etobicoke, Ontario M9W 6J6**

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 675-7661

Telex:

Fax: (416) 672-4220

President: W.G. Lewitt

R & D Director: John C. Nixon, M.D.

Telephone: (416) 672-4214

Employees: 3200

R & D Employees: 50

(In biotechnology: 10)

Founded: 1969

Annual Sales: \$200M

R & D Expenses: \$15M

(In biotechnology: \$250 k)

PRINCIPAL ACTIVITIES: Provision of medical and diagnostic services; manufacture and sale of advanced mass spectrometry instruments, development of hemoglobin-based human blood substitutes.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of hemoglobin-based human blood substitutes.

MANUFACTURING: Monoclonal antibodies for the detection of Neisseria gonorrhoea.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Sale of monoclonal antibodies; development of diagnostic systems using monoclonal antibodies for the detection of Neisseria gonorrhoea; use of mass spectrometry in the detection of organic and inorganic compounds.

COMMENTS: Most of the research and development undertaken by MDS Health Group Limited is through the Sciex Division which is responsible for the mass spectrometry enterprises.

CONTACT PERSON: John C. Nixon, M.D.

OTHER ACTIVITIES:

R & D in the field of advanced techniques in mass spectrometry.

MEDICORP INC.

HEAD OFFICE

**Biotechnology Research Institute (NRCC)
6100, avenue Royalmount
Montréal (Québec) H4P 2R2**

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 496-1922
Telex: 6503156922
Fax: (514) 496-6232

President: **Elliott Block, Ph.D.**

R & D Director: **Pierre Du Ruisseau, Ph.D.**
Telephone: (514) 496-1922

Employees: 7
R & D Employees: 5
(In biotechnology: 5)

Founded: 1985
Annual Sales: \$0-1M
R & D Expenses: \$0.5-1M
(In biotechnology: \$~1M)

PRINCIPAL ACTIVITIES: Human health care.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Cancer diagnostics. AIDS therapeutics and diagnostics. Transplantation antigens. Quadromas.

MANUFACTURING: Quadromas.

SALES/OTHER(S): Strep A, Strep B, Glycosylated hemoglobin kits and control sera.

AFFILIATIONS: Medicorparg LTDA Buenos Aires, Argentina; Monteiro Aranha Biotecnologia LTDA, Rio de Janeiro, Brazil.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: R & D joint ventures, distribution of human health care diagnostics, livestock and agricultural diagnostics in Canada and Latin America.

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

MEIOGENICS RESEARCH CORPORATION

HEAD OFFICE

1716 Woodward Drive
Ottawa, Ontario K2C 0P8

RESEARCH FACILITY

Same as Head Office

Telephone: (613) 727-8395

Telex:

Fax: (613) 727-9785

President: Dr. Peter Duck

R & D Director: Dr. Peter Duck

Telephone:

Employees: 7

R & D Employees: 5

Founded: 1982

Annual Sales: \$0-1M

R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: The development of nucleic acid hybridization-based diagnostic products for agriculture, food and medicine.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Hybridization-based user friendly diagnostic systems.

MANUFACTURING:

SALES/OTHER(S): Consulting/research contracts.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Yes, with universities.

COMMENTS:

CONTACT PERSON: Dr. Peter Duck

MERCK FROSST

HEAD OFFICE

16711 Trans Canada Highway
Kirkland, Québec H9H 3L1

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 695-7920
Telex: 05-821533
Fax: (514) 630-2670

Manufacturing Director:
M. Pelini

Telephone: (514) 695-7920

President: **Dr. J. Zabriskie**

Executive Director, Research: **Dr. Cecil Pickett**
Telephone: (514) 630-2600

Employees: **850**
R & D Employees: **120**

Founded: **1982**
Annual Sales: **\$30+M**
R & D Expenses: **\$10+M**

PRINCIPAL ACTIVITIES: **R & D in drugs, stable isotopes, and radiopharmaceuticals. Health care: animal and human pharmaceuticals.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Basic research in the area of drug design against the leukotriene receptors and lipoxygenase enzymes. Study of leukotriene metabolism in various disease states.

MANUFACTURING: Stable isotopes, radiopharmaceuticals, animal pharmaceuticals.

SALES/OTHER(S): Stable isotopes, radiopharmaceuticals, animal and human pharmaceuticals.

AFFILIATIONS: Merck and Company Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. S. Goldstein, Director, Research Administration and Planning.**

OTHER ACTIVITIES:

JOHN MEUNIER INC.

HEAD OFFICE

**6290, rue Périnault
Montréal (Québec) H4K 1K5**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 334-7230**
Telex: **05-825693**
Fax: **(514) 334-5070**

Manufacturing Director:
Pierre Bélisle

Telephone: **(514) 334-7230**

President: **Gabriel Meunier, P.Eng.**

R & D Director: **Hoang Van Hoi, P.Eng.**
Telephone: **(514) 334-7230**

Employees: **45**
R & D Employees: **3**

Founded: **1948**
Annual Sales: **\$3-5M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Manufacture of water treatment systems.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Filtration through peat moss.
Compressed air jets. Bio-filters.**

MANUFACTURING: **Filtration through peat moss. Compressed
air jets. Bio-filters.**

SALES/OTHER(S): **Water treatment systems.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Cooperation for the implementation of the
above-mentioned processes.**

COMMENTS:

CONTACT PERSONS: **Gabriel Meunier, P.Eng.; Hoang Van Hoi, P.Eng.**

MICROBE INC.

HEAD OFFICE

**85 Midpark Road
London, Ontario N6N 1B2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(519) 668-1005**
Telex:
Fax: **(519) 668-3188**

Sales Director:
Michael Talbot

Telephone: **(519) 668-1005**

President: **Dr. J.P. Insell**

R & D Director: **Dr. J.P. Insell**
Telephone: **(519) 668-1005**

Employees: **12**
R & D Employees: **8**

Founded: **1983**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: **Enhanced microbial degradation of toxic and non-toxic environmental pollutants, biopesticides, biomedical research.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Microbial degradation of pollutants. Wastewater treatment. Biopesticides. Biomedical research.**

MANUFACTURING: **Non-genetically engineered bacterial cultures for specific problems.**

SALES/OTHER(S): **Customized non-genetically engineered bacterial cultures. Chemical analysis. Wastewater treatment systems.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Contacts.**

COMMENTS:

CONTACT PERSON: **Ms. D. Boersma, Lab Manager.**

MICROBIX BIOSYSTEMS INC.

HEAD OFFICE

RESEARCH FACILITY

**341 Bering Avenue
Toronto, Ontario M8Z 3A8**

Telephone: **(416) 425-5959**

Telex:

Fax: **(416) 222-5326**

President: **James A. Long**

R & D Director: **William J. Gastle**

Telephone: **(416) 233-6587**

Employees: **10**

R & D Employees: **2**

Founded: **1980**

Annual Sales: **N/A**

R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: Manufacture of microbial antigens for serological procedures.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Assay development (eg. ELISA) and direct test technology.

Contract work.

MANUFACTURING: Manufacture of microbial antigens for serological procedures.

SALES/OTHER(S): Manufacture of diagnostic tests for other companies under private labels.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Would welcome both Canadian and international collaboration.

COMMENTS:

CONTACT PERSON: William Gastle

MICROELITE PLANT LABORATORIES INC.

HEAD OFFICE

**P.O. Box 308
Kentville, Nova Scotia B4N 3X1**

Telephone: **(902) 679-1170**

Telex:

Fax: **(902) 679-1170**

President: **Allison Woodworth**

R & D Director: **Robert Cervelli**

Telephone: **(902) 679-1170**

Employees: **4**

R & D Employees: **4**

(In biotechnology: **4**)

RESEARCH FACILITY

**15 Chipman Drive, Suite #9
Annapolis Valley Industrial Park
Kentville, Nova Scotia
(Mailing address at left)**

Manufacturing Director:

Robert Cervelli

Telephone: **(902) 679-1170**

Founded: **1987**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0-0.5M**

(In biotechnology: **\$75K**)

PRINCIPAL ACTIVITIES: Plant micropropagation, contract propagation or contract re-search.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Plant tissue culture. Contract propagation. Propagation refinement studies.

MANUFACTURING: Micropropagation. Wholesale nursery.

SALES/OTHER(S): Plantlets in plug, liner or nursery stock sizes.

OTHER ACTIVITIES:

Services for conventional propagation through seed, rooted cuttings, etc.

AFFILIATIONS: Tissue Culture Association; International Plant Propagators Society; Cooperative Research with Mariboon Biological Consultants.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Access to new plant varieties, marketing collaboration for same.

COMMENTS:

CONTACT PERSON: **Robert Cervelli, General Manager.**

MICROTEK RESEARCH AND DEVELOPMENT LIMITED

HEAD OFFICE

P.O. Box 2460
101-9865 West Saanich Road
Sidney, British Columbia V8L 3Y3
 Telephone: (604) 655-1455
 Telex:
 Fax: (604) 655-7131

President: **Dr. W.W. Kay**

R & D Director: **Stephen G. Newman, Ph.D.**
 Telephone: (604) 655-1455

Employees: 7
 R & D Employees: 4
 (In biotechnology: 4)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Stephen G. Newman, Ph.D.

Telephone: (604) 655-1455

Founded: 1984
 Annual Sales: \$0-1M
 R & D Expenses: \$0-0.5M
 (In biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: Aquaculture-oriented research, vaccine development, polyclonal antibody production, aquaculture health services, diagnostic kit development.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Vaccines - aquaculture and agriculture nucleic acid probes.

MANUFACTURING: Vaccines - aquaculture, polyclonal diagnostic antisera.

SALES/OTHER(S): Vaccines - aquaculture, polyclonal antisera.

OTHER ACTIVITIES:

Monoclonal antibody production.

AFFILIATIONS: 50% owner of CBM Bioventures Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Seeking joint ventures in aquaculture/agriculture diagnostic kit and vaccine areas.

COMMENTS: We have expertise in recombinant nucleic acid research and monoclonal antibody production.

CONTACT PERSON: Stephen G. Newman, Ph.D.

MOLSON BREWERIES OF CANADA LIMITED

HEAD OFFICE

**3300 Bloor Street West
Suite 3500
Toronto, Ontario M6X 2X7**

RESEARCH FACILITY

**2486 Dunwin Drive
Mississauga, Ontario L5L 1J9**

Telephone: **(416) 232-1786**
Telex: **06-984833**
Fax: **(416) 232-1717**

President: **John C. Carroll**

Vice-President, R & D and Quality Assurance: **Dr. David W. Hysert**
Telephone: **(416) 828-1786**

Employees: **4000**
R & D Employees: **10**

Founded: **1786**
Annual Sales: **\$30+M**
R & D Expenses: **\$1-3M**

PRINCIPAL ACTIVITIES: **Brewing.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Genetic engineering of yeast.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: **Operating company of the Molson Companies Limited.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. David W. Hysert**

MYCOTECH - For Research & Development

HEAD OFFICE

**142 Whitechurch Mews
Mississauga, Ontario L5A 4B3**

Telephone: **(416) 279-4154**
Telex:
Fax:

President: **Mujeeb H. Zoberi, Ph.D.**

R & D Director: **Mujeeb H. Zoberi, Ph.D.**
Telephone: **(416) 279-4154**

Employees: **3**
R & D Employees: **1**
(In biotechnology: **1**)

RESEARCH FACILITY

**Faculty of Forestry
University of Toronto
Toronto, Ontario M5S 1A1**

Telephone: **(416) 978-3849**

Founded: **1985**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Biodegradation, biomonitoring and bioengineering.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Environmental and industrial microbiology, plant pathology, physiology, ecology and biochemistry. Biodegradation using fungi, protozoa and bacteria. Micropropagation of hardwoods using microorganisms for containerized tree seedlings.

MANUFACTURING:

SALES/OTHER(S): **Services.**

AFFILIATIONS: **University of Toronto.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Information regarding Canadian and/or international biotechnological projects where our expertise may be required.

COMMENTS: Mycotech is a newly-born organization for research and development. One of its objectives is to control the microbiological quality of our environment.

CONTACT PERSON: **Dr. M.H. Zoberi**

OTHER ACTIVITIES:

NELSON'S DAIRY

HEAD OFFICE

**180 Ormont Drive
Weston/City of North York, Ontario M9L 1N7**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 742-6811**
Telex:
Fax: **(416) 624-2469**

Manufacturing Director:
D. Armstrong

Telephone: **(416) 742-6811**

President: **Peter Lowes**

R & D Director: **Arvind Gelda**
Telephone: **(416) 742-6811**

Employees: **100**
R & D Employees: **6**

Founded: **1989**
Annual Sales: **\$15-30M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Immobilization of lactase enzyme for the manufacture of lactose reduced dairy products.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Purification and immobilization of lactase enzyme.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Arvind Gelda**

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BIOTECHNOLOGY ACTIVITIES:	OTHER ACTIVITIES:
<u>RESEARCH & DEVELOPMENT:</u> Working on electroporation methods via genetic engineering. <u>MANUFACTURING:</u> <u>SALES/OTHER(S):</u>	Electrophoresis units (vertical and horizontal). Termination devices for electrophoresis units.
<u>AFFILIATIONS:</u> Queen's University; NRC; Chips Computers.	
<u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u>	
<u>COMMENTS:</u> 100% Canadian owned.	
<u>CONTACT PERSON:</u> Percy Barr, Tel.: (513) 384-1753.	

NORANDA RESEARCH CENTRE

HEAD OFFICE

Noranda Inc.
Suite 4500, Commerce Court West
Toronto, Ontario M5L 1B6

Telephone: (416) 982-7111
Telex: 08524231
Fax: (416) 982-7021

President: **David Kerr**

R & D Director: **Dr. P. Tarasoff**
Telephone: (514) 897-8840
Fax: (514) 897-9589
Employees: **3,000+**
R & D Employees: **140**

RESEARCH FACILITY

240, boulevard Hymus
Pointe-Claire (Québec) H9R 1G5

Founded: **1963**
Annual Sales:
R & D Expenses: **\$14+M**

PRINCIPAL ACTIVITIES: **Noranda Inc.: minerals, forest products, manufacturing, oil and gas. Contracts-out research in biotechnology.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Expertise in mineral leaching and effluent treatment, active in biological oxidation of sulphide tailings, interests in biological treatment of hazardous wastes and bioleaching of pulp. Contracts-out R & D in biotechnology.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: **Noranda, Inc.; MacMillan Bloedel.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. G.R. Kubanek (514) 897-8840.**

OTHER ACTIVITIES:

NOVA CHEM LIMITED

HEAD OFFICE

P.O. Box 1030 Armdale
Halifax, Nova Scotia B3L 4K9

Telephone: (902) 455-4690
Telex:
Fax:

President: D.H. Davies, Ph.D.

R & D Director: E.R. Hayes, Ph.D.
Telephone: (902) 542-2201

Employees: 5
R & D Employees: 5

RESEARCH FACILITY

c/o Department of Chemistry
Acadia University
Wolfville, Nova Scotia B0P 1X0

Founded: 1978
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Research concerning chitosan and its derivatives; contract research and testing.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Slow release agent for drugs and hormones; preservative coating for fruits and vegetables; recovery of pigment from shellfish.

MANUFACTURING: Expected in one to two years.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Testing and marketing.

COMMENTS:

CONTACT PERSON: D.H. Davies, Ph.D.

OTHER ACTIVITIES:

NOVA HUSKY RESEARCH CORPORATION LIMITED

HEAD OFFICE

#2928-16 Street North East
Calgary, Alberta T2E 7K7

RESEARCH FACILITY

Same as Head Office

Telephone: (403) 250-4700

Telex:

Fax: (403) 290-6379

President: Dr. George B. Miller

R & D Director: Dr. George B. Miller

Telephone: (403) 250-4767

Employees: 74

R & D Employees: 4)
(In biotechnology: 4)

Founded: 1981

Annual Sales: N/A

R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Basic and Applied research in the oil and gas sector for the parent companies: NOVA Corporation of Alberta and Husky Oil Operations Ltd.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Petroleum microbiology, microbially-enhanced oil recovery; biodeterioration of materials; biodegradation of wastes and toxics in the environment; value-added products from fermentation; microbially-enhanced corrosion.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Collaboration in cost sharing or joint venture for high-risk, cost intensive studies like fermentation to produce new products for market.

COMMENTS:

CONTACT PERSONS: Dr. Mike Francis, Tel.: (403) 250-4713; Dr. Tom Jack, Tel.: (403) 250-4751.

OTHER ACTIVITIES:

NOVO LABORATORIES LTD.

HEAD OFFICE

**1755 Steeles Avenue West
Willowdale, Ontario M2R 3T4**

RESEARCH FACILITY

Telephone: (416) 663-6686
Telex: 06-218538
Fax: (416) 667-1545

General Manager: **Dr. John Clement**

R & D Director:
Telephone:

Employees: **55**
R & D Employees: **3**

Founded: **1983**
Annual Sales: **\$15-30M**
R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: Manufacture of insulin and of insulin pharmaceutical products. Extraction and production of biological substances. Marketing of bioindustrial products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Product and process development in biological extractables, including insulin. Related analytical R & D. Clinical trials.

MANUFACTURING: Insulin (bulk supplies); insulin pharmaceutical products (marketed under Connaught Novo label).

SALES/OTHER(S): Canadian marketing representative for Novo Bioindustrial products. Sales of cell culture reagents, antibiotics, growth factors, hormones, and enzymes. Distribution of a line of analytical products including RIA kits for identification and assay of endocrine substances.

AFFILIATIONS: Wholly-owned subsidiary of Novo Industries A/S. (Danish Parent Co. has 5760 employees world-wide and spends 11% of turnover on R&D). Canadian insulin sales represented through Connaught Novo Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Open to consider potentially beneficial contacts, re: manufacturing, supply, representation, joint development, etc.

COMMENTS: Novo is a world leader in biotechnology, industrial fermentation/purification, industrial enzymes, and insulin.

CONTACT PERSON: **Dr. John Clement**

OTHER ACTIVITIES:

ORTHO PHARMACEUTICAL (CANADA) LTD.

HEAD OFFICE

**19 Greenbelt Drive
Don Mills, Ontario M3C 1L9**

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 449-9444

Telex:

Fax: (416) 449-2658

President: **Percy Skuy**

Vice-President, Operations:

Austin Woodhouse

Telephone: (416) 449-9444

Vice-President, Research: **Laurence Russ**

Telephone: (416) 449-9444

Employees: **280**

R & D Employees: **51**

(In biotechnology: **30**)

Founded:

1941

Annual Sales:

\$30+M

R & D Expenses:

\$5-7M

(In biotechnology:

\$~2M)

PRINCIPAL ACTIVITIES: Development and marketing of human pharmaceuticals and medical devices.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of biologically-derived cell growth factors and immunosuppressive compounds. Development of therapeutic monoclonal antibodies.

MANUFACTURING: Pilot plant mammalian cell culture facility in place.

SALES/OTHER(S): Marketing of orthoclone okt *3, monoclonal antibody that reverses organ transplant rejection.

OTHER ACTIVITIES:

Research and development in the areas of infectious disease, family planning and general gynecology.

AFFILIATIONS: Member of the Johnson & Johnson family of companies.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Access to information pertaining to new product development in the area of medical biotechnology and to potential markets for biotechnology-derived products developed by Ortho.

COMMENTS:

CONTACT PERSON: Laurence J. Russ, Ph.D., Vice-President, Research.

PACIFIC PHARMACEUTICALS LTD.

HEAD OFFICE

**Suite 1130-1176 West Georgia Street
Vancouver, British Columbia V6E 4A2**

Telephone: **(604) 683-8566**

Telex:

Fax: **(604) 681-0207**

Executive Director: **F. Michael P. Warren**

R & D Director: **Dr. Ray MacDougal**

Telephone: **(613) 549-3907**

Employees: **3**

R & D Employees: **N/A**

RESEARCH FACILITY

**Biomedical Research Centre
University of British Columbia
Vancouver, British Columbia
V6T 1W5**

Director of Research:

Dr. John Schrader

Telephone: **(604) 228-7810**

Founded: **1980**

Annual Sales: **\$0-1M**

R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: Research, develop and market new drugs for the treatment of cancer and related medical conditions.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Collecting and coordinating clinical data relating to the treatment of various cancers with alpha interferon and submitting to HPB - Ottawa.

MANUFACTURING: In the planning stage at this time.

SALES/OTHER(S): Marketing alpha interferon for the treatment of hairy cell leukemia and juvenile laryngeal papillomatosis.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: J. Graham Nowatt, Acting General Manager, Tel.: (604) 683-8566.

OTHER ACTIVITIES:

PALADIN HYBRIDS INC.

HEAD OFFICE

**210 Wanless Drive
Brampton, Ontario L6V 2L2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 846-3983**
Telex: **069-7535**
Fax: **(416) 846-6909**

President: **Gabe Eros**

R & D Director: **Paul G. Arnison, Ph.D.**
Telephone: **(416) 846-3983**

Employees: **14**
R & D Employees: **13**

Founded: **1985**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Hybrid canola cultivar development.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Brassica: cell and anther culture, hybrid systems development transformation and molecular biology.**

MANUFACTURING: **Microspore-derived inbred line production.**

SALES/OTHER(S):

OTHER ACTIVITIES:

Plant breeding.

AFFILIATIONS: **Oseco Inc.; Canadian Seed Coaters Inc.; Pioneer Grain Ltd.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Open to inquiries from all interested parties.**

COMMENTS:

CONTACT PERSON: **G. Eros, President.**

PALLISER ANIMAL HEALTH LABORATORIES LTD.

HEAD OFFICE

P.O. Box 1327
#2825 - 12th Avenue North
Lethbridge, Alberta T1J 4K1

RESEARCH FACILITY

Same as Head Office

Telephone: (403) 328-1844.
Telex:
Fax:

Manufacturing Director:
Dr. J.A. Bradley

Telephone: (403) 381-1191 (home)

President: Dr. C. leQ Darcel

R & D Director: Dr. C. leQ Darcel
Telephone: (403) 327-3741 (home)

Employees: 4
R & D Employees: 3

Founded: 1986
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: R & D: ELISA (especially leptospirosis and domestic animal virus infections).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Diagnostic test development.

MANUFACTURING:

SALES/OTHER(S): Large-scale serological monitoring.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Provincial and Federal government contracts and consulting; large-scale serological monitoring of animal diseases, FAO, WHO, CIDA, etc.; large-scale serological monitoring of animal and zoonotic diseases.

COMMENTS:

CONTACT PERSON: Dr. J.A. Bradley

PAQUES LAVALIN

HEAD OFFICE

**2235 Sheppard Avenue East
Willowdale, Ontario M2J 5A8**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 756-9687**
Telex: **06-23765**
Fax: **(416) 756-4998**

Manufacturing Director:
David S. Fisher, P.Eng.

Telephone: **(416) 756-9687**

President: **Derk Z. Matt, P.Eng.**

R & D Director: **Mark Ferguson, P.Eng.**
Telephone: **(416) 756-9687**

Employees: **12**
R & D Employees: **4**

Founded: **1985**
Annual Sales: **\$15-30M**
R & D Expenses: **\$1M**

PRINCIPAL ACTIVITIES: Design and supply of BIOPAG anaerobic wastewater treatment facilities.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Industrial effluent pilot plant studies. Fundamental research into granulation of anaerobia bacteria for industrial pollution control and energy from waste.

MANUFACTURING: Specialized plastic corrosion-resistant "settler" modules.

SALES/OTHER(S): Complete BIOPAG anaerobic wastewater treatment facilities.

OTHER ACTIVITIES:

AFFILIATIONS: Biotechnology Research Institute (a division of NRCC in Montreal).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Ron Cameron, P.Eng. Director of Marketing.

PARACEL LABORATORIES LTD.

HEAD OFFICE

#8 - 17 Grenfell Crescent
Nepean, Ontario K2G 0G3

RESEARCH FACILITY

Same as Head Office

Telephone: (613) 225-2447

Telex:

Fax:

President: Dr. W. Craig

R & D Director: Dr. W. Craig

Telephone:

Employees: 7

R & D Employees: 6

(In biotechnology: 6)

Founded: 1985

Annual Sales: \$0-1M

R & D Expenses: \$0-0.5M

(In biotechnology: \$300K)

PRINCIPAL ACTIVITIES: Chemistry of biologically important compounds, assessment of fungal contamination of indoor air, development of ELISA systems.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Polyclonal and monoclonal antibodies synthesis of hapten conjugates.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: External distributors.

COMMENTS:

CONTACT PERSON: Dr. W. Craig

OTHER ACTIVITIES:

PEGASUS INDUSTRIAL SPECIALTIES LTD.

HEAD OFFICE

**4490 Sheppard Avenue East
Aginccourt, Ontario M1S 4J9**

Telephone: **(416) 298-3141**
Telex: **065-26147**
Fax: **(416) 291-4948**

President: **Neal Trent**

R & D Director: **Ron Trent**
Telephone:

Employees: **15**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Neal Trent

Telephone: **(416) 298-3141**

Founded: **1968**
Annual Sales: **\$1-3M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$45K**)

PRINCIPAL ACTIVITIES: Designing, engineering and building research pilot and production units for distillation, extraction, absorption, fermentation; reactors and evaporators.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fermentation system design. Bio-reactor design. Alcohol concentration process.

MANUFACTURING: Fermentors: laboratory, bench-scale, pilot-scale. Custom-design fluidized bed reactors. Special external loop air lift fermentor. Custom-manufactured glass vessels. Biosensors: pH, pO₂, temperature monitoring systems.

SALES/OTHER(S):

OTHER ACTIVITIES:

Distillation and extraction system design.

Specialized glass vessel design and manufacture.

Custom glassware fabrication.

Glass acid waste drain system.

Distilled water systems.

AFFILIATIONS: **Pegasus Glass Specialties; Pegasus Biotech.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Product manufacturing licence agreements.**

COMMENTS:

CONTACT PERSON: **R.T. Fraser, Marketing Manager.**

PHARMACIA (CANADA) INC.

HEAD OFFICE

500, boulevard Morgan
Baie d'Urfé (Québec) H9X 3V1

RESEARCH FACILITY

Telephone: (514) 457-8661
Telex: 05-821607
Fax: (514) 457-4616

President: Michel Geadah

R & D Director:
Telephone:

Employees: 120
R & D Employees: N/A

Founded: 1967
Annual Sales: N/A
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Sale of reagents and complete range of instrumentation for HPLC, FPLC, amino acid analyser, electrophoresis. Peptide and DNA synthesis and recombinant DNA technology.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: In bioprocessing, specializing in the separation of biotechnology-derived products; economical process for separation and purification of biological large-scale purification products; purification of monoclonal antibodies and synthetic oligonucleotides in laboratories across Canada via contracts.

MANUFACTURING:

SALES/OTHER(S): Distribution of reagents and complete range of instrumentation for HPLC, FPLC, amino acid analyser, electrophoresis, peptide and DNA synthesis and recombinant DNA technology - made in Sweden. .

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

PHERO TECH INC.

HEAD OFFICE

**1140 Clark Drive
Vancouver, British Columbia V5L 3K3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 255-7381**
Telex: **04-351279**
Fax:

Manufacturing Director:
Peter Putland

Telephone: **(604) 255-7381**

President: **Steve Burke**
Chief Executive Officer: **Peter Putland**
R & D Director: **Dr. Staffan Lindgren**
Telephone: **(604) 255-7381**

Employees: **15**
R & D Employees: **5**
(In biotechnology: **2**)

Founded: **1981**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **<\$250K**)

PRINCIPAL ACTIVITIES: Insect pest management with semiochemicals (pheromones).

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

**RESEARCH & DEVELOPMENT: Semiochemical improvements.
Field testing of management products.**

**MANUFACTURING: Chemical synthesis of semiochemicals,
especially optically active ones (using enzymes).**

**SALES/OTHER(S): Cost/benefit analysis of insect manage-
ment with semiochemicals. Technology transfer to end
user.**

AFFILIATIONS:

**FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Sourcing of polymers, films and other
plastics or formulations, field trials with concerned forestry or agricultural communities.**

COMMENTS:

CONTACT PERSONS: Steve Burke; Peter Putland.

PHILOM BIOS INC.

HEAD OFFICE

#15 Innovation Boulevard
Saskatoon, Saskatchewan S7N 2X8
Mailing address: Mail #2, #4-110 Research Drive

RESEARCH FACILITY

Same as Head Office

Telephone: (306) 665-6211
Telex: TFF6462
Fax:

President: John V. Cross

R & D Director:
Telephone:

Employees: 21
R & D Employees: 21

Founded: 1980
Annual Sales: \$0-1M
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Development, manufacture and marketing of biological input products for the plant growth industries.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Bioherbicides, biofertilizers, biofungicides.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: New technologies and products in area of biological input systems; strategic alliances with established marketing corporations outside Canada.

COMMENTS:

CONTACT PERSON: J.V. Cross

OTHER ACTIVITIES:

PISCICULTURE DES ALLEGHANYS INC.

HEAD OFFICE

**2755, chemin Grande Ligne
Saint-Philemon
Comté de Bellechasse (Québec) G0R 4A0**

RESEARCH FACILITY

Same as Head Office

Telephone: **(418) 469-2823**
Telex:
Fax: **(418) 681-7806**

Manufacturing Director:
Yves Boulanger

Telephone: **(418) 469-2823**

President: **Yves Boulanger**

R & D Director: **Yves Boulanger**
Telephone: **(418) 469-2823**

Employees: **8**
R & D Employees: **2**
(In biotechnology: **2**)

Founded: **1972**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$75K**)

PRINCIPAL ACTIVITIES: R & D and production of salmonidae.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of all-female, sterile, hybrid and disease-free strains.

MANUFACTURING: Production of all-female, sterile, hybrid and disease-free strains.

SALES/OTHER(S): Eggs and fry of rainbow and speckled trout.

AFFILIATIONS: **Biorex G.C. Inc.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSONS: **Yves Boulanger; Marc Gagnon.**

OTHER ACTIVITIES:

POLLUTECH LIMITED

HEAD OFFICE

**788 Westgate Road
Oakville, Ontario L6L 5N2**

RESEARCH FACILITY

**Same as Head Office and
1149 Varvier Road
Sarnia, Ontario N7S 3Y6**

Telephone: (416) 847-0065
Telex: via CNCP PIFRCOM 21:POU004
Fax: (416) 847-3840

President: **Dr. J.D. Norman, P.Eng.**

R & D Director: **R.V. Laughton, B.Sc.M.Eng.**
Telephone: (416) 847-0065

Employees: 20
R & D Employees: 16
(In biotechnology: 16)

Founded: 1989
Annual Sales:
R & D Expenses:

PRINCIPAL ACTIVITIES: Environmental consultants, principally in biotreatment.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Biological waste treatment. Conversion to single cell protein and other feed stocks.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Richard Laughton, Vice-President.**

OTHER ACTIVITIES:

Methods development. Occupational health and safety.

POS PILOT PLANT CORPORATION

HEAD OFFICE

**118 Veterinary Road
Saskatoon, Saskatchewan S7N 2R4**

Telephone: **(306) 975-7066**
Telex: **074-2882**
Fax: **(306) 343-5966**

President: **Roy A. Carr**

R & D Director: **Paul Fedec, Ph.D.**
Telephone: **(306) 975-7066 ext. 45**

Employees: **38**
R & D Employees: **25**
(In biotechnology: **2**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Janos Mikle

Telephone: **(306) 975-7066 ext. 43**

Founded: **1973**
Annual Sales: **\$1-3M**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$300K**)

PRINCIPAL ACTIVITIES: R & D into processing of agricultural products pilot unit. Food industry and health care products test market production capabilities. Analytical services, information retrieval services.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Enzyme-aided aqueous extraction of oils and fats from oilseeds. Enzymic modification of oils and fats pilot-scale test run of immobilized enzymes.**

MANUFACTURING: **Test market production of selected therapeutic components and products.**

SALES/OTHER(S):

AFFILIATIONS:

FORM C7 CANADIAN/INTERNATIONAL COOPERATION DESIRED: **POS offers fee-for-service pilot facility and staff. International access.**

COMMENTS:

CONTACT PERSON: **Roy A. Carr, President.**

OTHER ACTIVITIES:

PRECISION BIOLOGICALS INC.

HEAD OFFICE

**11A Pettipas Drive
Dartmouth, Nova Scotia B3B 1K1**

RESEARCH FACILITY

Same as Head Office

Telephone: **(902) 463-0119**

Telex:

Fax: **(902) 463-6421**

President: **Tony Bebbington**

R & D Director: **Tony Bebbington**
Telephone: **(902) 463-0119**

Employees: **8**

R & D Employees: **2**

Manufacturing Director:

Sandra LeBlanc

Telephone: **(902) 463-0119**

Founded: **1984**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Manufacture of clinical diagnostic products; specializing in blood coagulation studies and microbiology products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Investigations into rapid ID systems for microbiology.

MANUFACTURING: Precision manufacture of products for coagulation studies (thromboplastin, APTT reagent controls) and products for microbiology laboratories.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Our company is looking for international distribution and technology infusion in the field of microbiology.

COMMENTS:

CONTACT PERSON: Tony Bebbington

OTHER ACTIVITIES:

PREMIER PEAT MOSS LIMITED

HEAD OFFICE

**Chemin Témiscouata, C.P. 2600
Rivière-du-Loup (Québec) G5R 4C9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(418) 862-6356**
Telex: **051-3964**
Fax: **(418) 862-6685**

Manufacturing Director:
Jean-Marie Gagnon

Telephone: **(418) 862-6356**

President: **Bernard Bélanger**

R & D Director: **Alain Bélanger, Ph.D.**
Telephone: **(418) 862-6356**

Employees: **220**
R & D Employees: **38**
(In biotechnology: **30**)

Founded: **1933**
Annual Sales: **\$30+M**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$1+M**)

PRINCIPAL ACTIVITIES: Extraction of peat moss and manufacture of peat moss-based products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Biofertilizers (mycorrhizae), biofilters, composts, value-added substrates.

MANUFACTURING: Peat moss-based mixes, value-added specialties.

SALES/OTHER(S): Consulting. Service of substrates analyses. Research contracts.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Research cooperation. Carrying-out of private research contracts. Marketing of new products.

COMMENTS:

CONTACT PERSON: Dr. Michel Caron

OTHER ACTIVITIES:

Machines for peat moss extraction. Equipment for peat moss wrapping. Machines for stocking peat moss. General mixes made of sphagnum moss and raw peat moss.

PROBTEC CORPORATION

HEAD OFFICE

Room 236, Farquharson Building
4700 Keele Street
North York, Ontario M3J 1P3

Telephone: (416) 736-5390

Telex:

Fax: (416) 736-5594

President: B.W. Glickman, Ph.D.

R & D Director: R.M. Glickman

Telephone: (416) 736-5390

Employees: 10

R & D Employees: 8

(In biotechnology: 8)

RESEARCH FACILITY

Same as Head Office

Founded: 1987

Annual Sales: \$0-1M

R & D Expenses: \$0.5-1M

(In biotechnology: \$0.5-1M)

PRINCIPAL ACTIVITIES: Health care industry: DNA diagnostics for genetic and forensic analysis. DNA detection, toxicology, drug development, gene therapy.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Genetic probe analysis for genetic diseases, forensics, toxicology testing and systems development, drug design.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: York University; Molson Companies; North American Life; North York General Hospital. Agricultural diagnostics with Agdia, Ontario Molecular Diagnostics Incorporated (1988).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Strategic partnering with members of health care industry.

COMMENTS:

CONTACT PERSON: B.W. Glickman

PROPLANT GARDEN PRODUCTS LTD.

HEAD OFFICE

**2552 Burns Road
Port Coquitlam, British Columbia V3C 3V4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 942-5756**

Telex:

Fax:

Directors: **D.R. Polonenko, J.H. Peach, E. Jan.**

R & D Director: **Dr. D. Polonenko**

Telephone: **(604) 942-5756**

Employees: **25**

R & D Employees: **2**

Founded: **1987**

Annual Sales: **\$1-3M**

R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Wholesale horticultural greenhouse and nursery operation.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Plant tissue culture.**

MANUFACTURING: **Production of tissue-cultured tropical foliage plants.**

Growth of tropical, bedding and ornamentals for wholesale to commercial buyers.

SALES/OTHER(S): **Plant liners.**

AFFILIATIONS: **Flowers Canada; United Flower Growers Co-operative.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. D. Polonenko**

PULP AND PAPER RESEARCH INSTITUTE OF CANADA

HEAD OFFICE 570, boulevard St. John's Pointe Claire (Québec) H9R 3J9 Telephone: (514) 630-4100 Telex: 05-821541 Fax: (514) 640-4134 President: P.E. Wrist R & D Director: Dr. D. Atack Telephone: Employees: 377 R & D Employees: 304* (In biotechnology: 7)	RESEARCH FACILITY Same as Head Office Founded: 1925 Annual Sales: N/A R & D Expenses: \$22M (In biotechnology: \$1M)
PRINCIPAL ACTIVITIES: Research institute; miscellaneous services.	
BIOTECHNOLOGY ACTIVITIES: <u>RESEARCH & DEVELOPMENT:</u> Biological bleaching. Anaerobic fermentation of industry effluents. Pollutions control: waste treatment. Studies on ligninolytic and cellulolytic enzymes. <u>MANUFACTURING:</u> <u>SALES/OTHER(S):</u> Educating students in microbiology with Macdonald College of McGill University. <u>AFFILIATIONS:</u> <u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> <u>COMMENTS:</u> Partnership between Canadian government, Canadian Pulp and Paper Association, McGill University and University of British Columbia. <u>CONTACT PERSON:</u> Dr. Lubo Jurasek	OTHER ACTIVITIES: The institute carries out fundamental and applied research related to pulp and paper mill operations and trains graduate students in fundamental research related to pulp and paper technology. Student program in collaboration with: University of Montreal, École Polytechnique de Montréal, McGill University and University of British Columbia.

* Research scientists, engineers and technicians.

PURDEL COOPÉRATIVE AGRO-ALIMENTAIRE

HEAD OFFICE

155, rue St-Jean Baptiste
Bic
Comté de Rimouski (Québec) G0L 1B0

RESEARCH FACILITY

2465, 1^{re} avenue
Québec (Québec)

Telephone: (418) 736-4363
Telex:
Fax:

Executive Director: Denis Cassista

R & D Director: J. Alexandre Blais
Telephone: (418) 641-0764

Employees: 1,500
R & D Employees: 3

Founded: 1948
Annual Sales: \$30+M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Dairy products and fishery products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Shrimp: enzyme, pigment, flavour extraction, meat residue. Dairy: stability of milk proteins. Valorization of new products.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: J. Alexandre Blais

OTHER ACTIVITIES:

QA LABORATORIES LIMITED

HEAD OFFICE

**135 The West Mall
Toronto, Ontario M9C 1C2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 622-6705**
Telex:
Fax: **(416) 622-6591**

President: **Phyllis Entis**

R & D Director: **Phyllis Entis**
Telephone: **(416) 622-6705**

Employees: **N/A**
R & D Employees: **N/A**

Manufacturing Director:
Michael P. Entis

Telephone: **(416) 622-6705**

Founded: **1979**
Annual Sales: **N/A**
R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: R & D of microbiology products and techniques for use in food and pharmaceutical industries; marketing of same.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: R & D of visible colour DNA probes for detection of salmonella and listeria, to be used in conjunction with HGMF technology.

MANUFACTURING: Manufacture of filtration units, membrane filters (HGMF's), ISO grid "line counters", all to be used in conjunction with above mentioned DNA probes.

SALES/OTHER(S): Sale of all the above products.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Michael P. Entis, Vice-President.**

OTHER ACTIVITIES:

Also developing and/or improving HGMF technology for detection and enumeration of:

- Total bacteria;
- Total coliform;
- Fecal coliform;
- E. Coli;
- Yeast and mold;
- S. aureus;
- and others, as applied to the food and pharmaceutical industries.

QUADRA LOGIC TECHNOLOGIES INC.

HEAD OFFICE

**520 West 6th Avenue
Vancouver, British Columbia V5Z 4H5**

Telephone: **(604) 872-7881**
Telex: **0454654**
Fax: **(604) 875-0001**

President: **James J. Miller**

R & D Director: **Dr. Julia G. Levy**
Telephone: **(604) 872-7881**

Employees: **65**
R & D Employees: **35**
(In biotechnology: **35**)

RESEARCH FACILITY

Same as Head Office

Vice-President, Operations,
Diagnostics: **Joseph Shaw**
Vice-President, Operations,
Phototherapeutics: **R.W. Gilroy**
Executive Vice-President, Q.L.T.
Pharmaceuticals Inc.: **E. Todla**

Telephone: **(604) 872-7881**

Founded: **1981**
Annual Sales: **\$0-1M**
R & D Expenses: **\$5-10M**
(In biotechnology: **\$5-10M**)

PRINCIPAL ACTIVITIES: Diagnostic and therapeutic products for human and veterinary medicine.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Immunodiagnostic and DNA probe assay systems, pregnancy and ovulation, infectious diseases, cancer, fish pathogens, antisolomatostatin growth stimulant, immune regulation agents.

MANUFACTURING: Microbiological reagents and instrumentation, pregnancy test kits, photodynamic therapy compounds.

SALES/OTHER(S): Microbiological reagents and instrumentation.

OTHER ACTIVITIES:

Growth stimulant field trials in swine in U.S.A.

Phototherapeutic compounds in Phase III clinical trials in U.S.A. and Canada.

AFFILIATIONS: DRES (Canadian Department of National Defence); Genentech; Industria Farmaceutica Cosmetica Italiana; International Minerals and Chemicals Corporation; American Cyanamid; Gongdong Enterprises Inc. (F.R.C.).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: In-licensing/joint venture arrangements for therapeutic and diagnostic products in discrete geographical areas; distribution arrangements for diagnostic disposables and instrumentation.

COMMENTS:

CONTACT PERSON: Ronald G. MacKenzie, Executive Vice-President.

QUALITY SEAFARMS LTD.

HEAD OFFICE

**Box 68, Campbell River
British Columbia V9W 4Z9**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 286-3023**

Telex:

Fax: **(604) 286-3541**

President: **A. Heimenberg**

Manager: **Keith Ware**

Telephone: **(604) 286-3023**

Employees: **9**

R & D Employees: **2**

(In biotechnology: **2**)

Founded: **1985**

Annual Sales: **\$1-3M**

R & D Expenses: **\$0-0.5M**

(In biotechnology: **\$250K**)

Manufacturing Director:

Barry Baldwin

Telephone: **(604) 286-3023**

PRINCIPAL ACTIVITIES: Salmon farming. Salmonid hatchery technology.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Sterilization of salmonids via temperature shock and gamete separation of milt. Technology is developed with Clearwater Marine (UK) in cooperative effort. R & D is carried out and follow-up analysis is done at grow-out sites, Read Island (Oil Bay) and Bold Point (Quadra Island).

MANUFACTURING:

SALES/OTHER(S): Hatchery equipment, technology consulting.

AFFILIATIONS: Clearwater Marine, (UK).

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Keith Ware, Manager.

OTHER ACTIVITIES:

Scallop culture development. Quality Seafarms has the first genera.

RAYLO CHEMICALS

(Division of Terochem Laboratories Ltd.)

<u>HEAD OFFICE</u> 8045 Argyll Road Edmonton, Alberta T6C 4A9		<u>RESEARCH FACILITY</u> Same as Head Office	
Telephone: (403) 468-6060 Telex: 37-43236 Fax: (403) 468-4784		Manufacturing Director: Dr. J. Smith	
President: Dr. G. Tertzakian			
R & D Director: Dr. W.H. Muhs Telephone:			
Employees: 55 R & D Employees: 20 (In biotechnology: 5)		Founded: 1961 Annual Sales: \$7-10M R & D Expenses: \$0.5-1M (In biotechnology: \$250K)	
PRINCIPAL ACTIVITIES: Manufacture of specialty chemicals, pharmaceutical intermediates, bulk active ingredients, biochemicals, reagents for gene synthesizers.			
<u>BIOTECHNOLOGY ACTIVITIES:</u>		<u>OTHER ACTIVITIES:</u>	
<u>RESEARCH & DEVELOPMENT:</u> Nucleoside-based pharmaceuticals. Anti-viral agents.		Scale-up R & D.	
<u>MANUFACTURING:</u> Experimental AIDS drugs (for clinical studies).		Fine chemicals and reagents.	
<u>SALES/OTHER(S):</u>			
<u>AFFILIATIONS:</u>			
<u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> Presently N/A.			
<u>COMMENTS:</u>			
<u>CONTACT PERSON:</u> J.M. Colomb, Communications Officer.			

RECBIOMINE INC.

HEAD OFFICE

**2095, boulevard Charest ouest, Suite 220
Sainte-Foy (Québec) G1N 4L8**

Telephone: **(418) 687-2887**
Telex:
Fax:

President: **Dr. Roger Guay**

R & D Director: **Edmond St-Jean**
Telephone: **(418) 653-2310**

Employees: **4**
R & D Employees: **3**

RESEARCH FACILITY

**2575, rue Watt, Suite 6
Sainte-Foy (Québec) G1P 3T6**

Founded: **1986**
Annual Sales: **N/A**
R & D Expenses: **N/A**

PRINCIPAL ACTIVITIES: **Bacterial leaching of minerals.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Recovery of metals of commercial value using bacterial leaching. Arsenopyrite degradation by *T. ferrooxidans*. Selection and development of adapted bacterial strains on different metal sulfides.**

MANUFACTURING:

SALES/OTHER(S): **Feasibility studies.**

AFFILIATIONS: **Enviromine Inc.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Research collaboration with European French-speaking communities and countries.**

COMMENTS:

CONTACT PERSON: **Roger Guay, Ph.D., Tel.: (418) 656-5795.**

OTHER ACTIVITIES:

Gravimetric and physical upgrading of commercial ores from tailings.

Determination of commercial recoverable values from tailings.

HSC RESEARCH DEVELOPMENT CORPORATION

HEAD OFFICE

**88 Elm Street
Toronto, Ontario M5G 1X8**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 598-5982**
Telex:
Fax: **(416) 598-7163**

President: **Dr. J.A. Lowden**

R & D Director: **Dr. A. Pollak**
Telephone: **(416) 598-5982**

Employees: **20**
R & D Employees: **15**
(In biotechnology: **15**)

Founded: **1981**
Annual Sales: **\$0-1M**
R & D Expenses:
(In biotechnology: **\$990K**)

Manufacturing Director:
Matt Bailey

Telephone: **(416) 598-5982**

PRINCIPAL ACTIVITIES: **Technology transfer, contract research. Applied research, direct sales.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Nonisotopic gene probes.**

MANUFACTURING: **Rare biochemicals, biologicals; research equipment.**

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: **The Hospital for Sick Children; CyberFluor Inc.**

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Venture investments, out-licensing opportunities.**

COMMENTS:

CONTACT PERSON: **Dr. J.A. (Sandy) Lowden**

RHIZOGEN CORP.

HEAD OFFICE

**Bay 5, #116-103rd Street East
Saskatoon, Saskatchewan S7N 1Y7**

Telephone: **(306) 373-3060**
Telex:
Fax:

President: **M. Trapp**

R & D Director: **Dr. J.H. Stephens**
Telephone: **(306) 373-3060**

Employees: **5**
R & D Employees: **3**
(In biotechnology: **3**)

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:
Dr. J.H. Stephens

Telephone: **(306) 373-3060**

Founded: **1987**
Annual Sales: **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$50K**)

PRINCIPAL ACTIVITIES: Nitrogen fixation: initial product is legume inoculant. Currently expanding R & D to other areas of agriculture, forestry and mining.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Upgrading legume inoculants and R & D directed toward a range of other potentially-important bacteria in agriculture and industry.**

MANUFACTURING: **Legume inoculant.**

SALES/OTHER(S): **To distributors only.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Co-operative ventures and/or licensing of techniques, organisms, products, etc., preferably incoming to Rhizogen.**

COMMENTS: **We are open to virtually all groups having a product, or potential product for use in agriculture, forestry, mining, etc.**

CONTACT PERSON: **Dr. J.H. Stephens**

OTHER ACTIVITIES:

LES LABORATOIRES RHIZOTEC INC.

HEAD OFFICE

780, rue Commerciale
Saint-Jean Chrysostôme (Québec) G6Z 2C9

RESEARCH FACILITY

Same as Head Office

Telephone: (418) 839-5931
Telex:
Fax:

Manufacturing Director:
Alain Marchand

Telephone: (418) 839-5931

President: Dr Maurice Lalonde

R & D Director: Jean-François Bourassa
Telephone: (418) 839-5931

Employees: 6
R & D Employees: 4
(In biotechnology: 4)

Founded: 1981
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: R & D and production: biofertilizers; fungus fermentation; biopesticides.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Process development for fermentation; fungus biofertilizers (forestry).

MANUFACTURING: Actinorrhizal *Frankia* and *ectomycorrhizae* fungus (nitrogen-fixing biofertilizer).

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: To be defined.

COMMENTS:

CONTACT PERSONS: Maurice Lalonde or Alain Marchand.

RIO ALGOM LIMITED

HEAD OFFICE

**120 Adelaide Street West
Toronto, Ontario M5H 1W5**

Telephone: **(416) 367-4000**

Telex:

Fax: **(416) 365-6870**

Chairman: **Ross J. Turner**

R & D Director: **Biman Bihari**
Telephone: **(705) 461-4457**

Employees: **2400**

R & D Employees: **20**

(In biotechnology: **3**)

RESEARCH FACILITY

**Process Development Department
P.O. Box 1500
Elliot Lake, Ontario P5A 2K1**

Founded: **1960**

Annual Sales: **N/A**

R & D Expenses: **\$0.5-1M**

(In biotechnology: **\$100K**)

PRINCIPAL ACTIVITIES: Mining and processing of uranium ores at Elliot Lake Operations; interests in copper molybdenum, metallurgical coal, potash, tin; specialty steel and stainless steel manufacturing; metal distribution in Canada, U.S.A. and Australia.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Improvement and application of bacteria-assisted leaching technique for uranium ores.

MANUFACTURING: Added production of uranium by bacteria-assisted leaching process in underground mines.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Exchange of technical and research data and information.**

COMMENTS:

CONTACT PERSON: **Biman Bihari**

INSTITUT ROSELL INC.

HEAD OFFICE

**8480, boulevard Saint-Laurent
Montréal (Québec) H2P 2M6**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 381-5631**
Telex: **05-825559**
Fax: **(514) 383-4493**

Manufacturing Director:
Jean-Louis Bilodeau

Telephone: **(514) 381-5631**

President: **Édouard Brochu**

R & D Director: **Jean-Paul Julien**
Telephone: **(514) 381-5631**

Employees: **40**
R & D Employees: **6**
(In biotechnology: **6**)

Founded: **1934**
Annual Sales: **\$1-3M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0.25M**)

PRINCIPAL ACTIVITIES: Production of microorganisms for use in food industries, agriculture, industry and for the prevention and treatment of disease.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Several projects are moving re: the selection of microbial species and methods for their production.

MANUFACTURING: Bacteria, yeasts and moulds.

SALES/OTHER(S): Within Canada and in many foreign countries.

AFFILIATIONS: Rougier Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Cooperation in research with the public sector.

COMMENTS:

CONTACT PERSON:

ROYAL PACIFIC SEA FARMS LTD.

HEAD OFFICE

**1407 - 700 West Pender
Vancouver, British Columbia V6C 1G8**

RESEARCH FACILITY

Telephone: **(604) 685-8340**
Telex:
Fax: **(604) 685-4282**

Manufacturing Director:
Brian Clive

President: **Tom May**

R & D Director: **George Hunter**
Telephone:

Employees: **80**
R & D Employees: **12**

Founded: **1987**
Annual Sales: **15-30 M\$**
R & D Expenses: **0.5-1M\$**

PRINCIPAL ACTIVITIES: **Production of salmon and trout; production of fish meal.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Recombinant somatotrophin; hybridization; induced triploidy; genetic selection.**

MANUFACTURING: **Sex control salmon; hydrolysis of fish offal.**

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Joint venture R & D in salmonid aquaculture/fish protein production.**

COMMENTS:

CONTACT PERSON: **George Hunter**

OTHER ACTIVITIES:

RUTLAND BIOTECH LIMITED

HEAD OFFICE

**3220 Park Place
666 Burrard Street
Vancouver, British Columbia V6C 2X8**

Telephone: **(604) 669-9515**

Telex:

Fax: **(604) 683-5612**

President: **Nicholas Synenko**

R & D Director: **Dr. Richard H. Roydhouse**

Telephone: **(604) 228-0303**

Employees: **20**

R & D Employees: **5**

(In biotechnology: **5**)

RESEARCH FACILITY

**4339 West 10th Avenue
Vancouver, British Columbia
V6R 2H6**

Manufacturing Director:

Alan Partridge

Telephone: **(604) 439-1559**

Founded: **1984**

Annual Sales: **\$0-1M**

R & D Expenses: **\$0.5-1M**

(In biotechnology: **\$0.5-1M**)

PRINCIPAL ACTIVITIES: Research, development and marketing including direct sales and third party licensing of proprietary oral health care products, human tissue lubricants and cleansers and environmental and occupational health products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Human oral, skin and tissue-care products using thin liquid film technology. Control and detoxification of heavy metal contamination with "liquid crystals".

MANUFACTURING: By contract to outside manufacturers.

SALES/OTHER(S): Direct by two company subsidiaries (EPS and Britley House). Licencing to others for manufacture and distribution on a royalty arrangement.

OTHER ACTIVITIES:

Environmental and occupational health.

AFFILIATIONS: EPS Environmental Protection Systems Limited; Britley House Corp.; Advanced Oral Health Corp. Limited; RBL Advanced Tissue Care Research Limited.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Patent protection extends to some 35 countries. The company has certain licensing agreements in place for certain products and is actively pursuing large distribution organization world-wide to market other certain products. Assistance in contacting and completing international arrangements could be helpful.

COMMENTS: The company has spent approximately \$4,000,000.00 since inception on research and development of unique, patentable technology, has several market-ready proven products, has direct sales and licensing agreements for manufacturing, sales and distribution of several products.

CONTACT PERSON: William G. Gillies, Vice-President, New Product Development.

SAFER LTD.

HEAD OFFICE

**455 Milner Avenue
Unit #1
Scarborough, Ontario M1B 2K4**

Telephone: **(416) 291-8150**
Telex: **065-25244**
Fax: **(416) 291-1755**

Vice-President and General Manager: **Paul D. Goodspeed**

R & D Director: **Dr. George Puritch**
Telephone: **(604) 652-4426**

Employees: **35**
R & D Employees: **26**

RESEARCH FACILITY

**6761 Kirkpatrick Crescent
R.R. #3
Victoria, British Columbia V8X 3X1**

Manufacturing Director:
Sherry Shaw

Telephone: **(416) 291-8150**

Founded: **1976**
Annual Sales: **\$1-3M**
R & D Expenses: **\$1-3M**

PRINCIPAL ACTIVITIES: Development and marketing of safe, effective pest controls and plant care products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Natural plant and animal oils as pest control products. Formulation of biological organisms for pest control.

MANUFACTURING: Pest control products.

SALES/OTHER(S):

OTHER ACTIVITIES:

Marketing in lawn and garden industry in Canada and overseas.

AFFILIATIONS: University of Ottawa; University of British Columbia; University of Victoria.
U.S. Head Office: 80 William Street, Boston, Massachusetts 02181, U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Paul D. Goodspeed, Vice President and General Manager.

SANEXEN INTERNATIONAL INC.

HEAD OFFICE

**7777, boulevard Louis-H. Lafontaine
Anjou (Québec) H1K 4E4**

Telephone: **(514) 355-3351**
Telex: **05-829559**
Fax: **(514) 354-2493**

President: **Jean-Guy Soulard, Ing., M.Sc.**

R & D Director: **Mme Diana Mourato, M.Sc.**
Telephone: **(514) 355-3351**

Employees: **500**
R & D Employees: **7**
(In biotechnology: **7**)

RESEARCH FACILITY

**10700, boulevard Henri-Bourassa
P.A.T. (Québec) H1C 1G9**

Technical Director:
Jean Paquin

Telephone: **(514) 355-3351**

Founded: **1968**
Annual Sales: **\$30+M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0.5M**)

**PRINCIPAL ACTIVITIES: Transport of toxic wastes, reclamation of contaminated areas,
treatment of wastewater and wastes.**

BIOTECHNOLOGY ACTIVITIES:

**RESEARCH & DEVELOPMENT: Biodegradation of high-chlorine
PCB present in contaminated soils by adapting micro-
organisms already found in the soils.**

**MANUFACTURING: Prefabricated modular system of biological
treatment - biolyse process.**

**SALES/OTHER(S): Biodegradation of contaminants present
in soils (i.e. HPA, HMA, phenols, hydrocarbons).**

AFFILIATIONS: Groupe Sanivan

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

**COMMENTS: Sanexen considers affiliations with American companies operating in the fields of
treatment of toxic wastes.**

**CONTACT PERSONS: Jean Paquin, Executive Director; Mrs. Diana Mourato, Director of Research
and Development; Pierre Hudon, Site Restoration.**

OTHER ACTIVITIES:

**Extraction of contaminants
present in soils.**

**Detoxification of liquid ef-
fluent.**

**System of wastewater and
wastes treatment.**

**Vacuum truck - Filtration
Unit.**

Site restoration.

**Management of dangerous
wastes.**

Prevention.

SCI CAN DIAGNOSTICS

HEAD OFFICE

#14601-134th Avenue
Edmonton, Alberta T5L 4S9

RESEARCH FACILITY

Same as Head Office

Telephone: (403) 455-6079
Telex: 037
Fax: (403) 455-6099

Manufacturing Director:
Garth Likes

Telephone: (403) 455-6079

President and C.E.O.: Terry Hay

R & D Director: Dr. T. Wegman
Telephone: (403) 432-2275

Founded: 1985
Annual Sales: \$0-1M
R & D Expenses: \$0.5-1M

Employees: 12
R & D Employees: 4

PRINCIPAL ACTIVITIES: Immunological-based products. Immunological R & D.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Immune monitoring. Diagnostics-Testing.

MANUFACTURING: T-Cell Recovery Column, B-cell Recovery Columns.

SALES/OTHER(S): Urinary tract infection kits complement.

AFFILIATIONS: Distributors in Canada, Singapore, Thailand, U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: International distribution. Joint venture - product development, technology exchange.

COMMENTS:

CONTACT PERSON: Garth Likes, Tel.: (403) 453-6079.

JOSEPH E. SEAGRAM & SONS LIMITÉE

HEAD OFFICE

1430, rue Peel
Montréal (Québec) H3A 1S9

Telephone: (514) 849-5271
Telex: 055-66261
Fax: (514) 366-3271

President: G. Jellinek

R & D Director: A. Peterson
Telephone: (514) 366-2410
Fax: (514) 366-3271

Employees: 1,400
R & D Employees: 19

RESEARCH FACILITY

225, avenue Lafleur
Ville LaSalle (Québec)
H8R 3H2

Manufacturing Director:
D. J. Pashleigh

Telephone: (514) 849-5271

Founded: 1887
Annual Sales: N/A
R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Production of beverages.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Alcohol fermentation process development; Selection and evaluation of yeast strains; fermentation process optimization; applications of extra cellular enzymes.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Development of new beverage products.

AFFILIATIONS: Subsidiary of The Seagram Company Ltd. Equity interest in Biotechnica International, USA.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Research facilities are located in Montreal, White Plains, N.Y., and Keith, Scotland. R & D Employees are for Canada only.

CONTACT PERSON:

SEASPRINGS FARMS LTD.

HEAD OFFICE

**38 Water Street, P.O. Box 2377
Charlottetown, Prince Edward Island C1A 8C1**

RESEARCH FACILITY

Telephone: (902) 566-1145
Telex: 014-44222
Fax: (902) 566-5358

President: O. Dyrkton

R & D Director: O. Soleim
Telephone:

Employees: 10
R & D Employees: varies
(In biotechnology: 2)

Founded: 1986
Annual Sales: \$5-7 M
R & D Expenses: \$0-0.5 M
(In biotechnology: \$50K)

PRINCIPAL ACTIVITIES: Development of land-based, intensive density fish farms.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Aquaculture. Genetic engineering for fish strains; water treatment and resources; man-made environments for fish growth.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Aquacare A.S. Nesttun, Norway.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Exchange of information relating to fish strains and raising of fish in captivity; commercial applications.

COMMENTS:

CONTACT PERSON: O. Dyrkton

SEMICO INC.

HEAD OFFICE

**4905, boulevard Laurier
Sainte-Rosalie (Québec) J0H 1X0**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 799-3225**
Telex: **05-830507**
Fax:

Manufacturing Director:
René Saint-Jean

Telephone: **(514) 799-3225**

President: **René Cloutier**

R & D Director: **Denis Bastien**
Telephone: **(514) 799-3225**

Employees: **60**
R & D Employees: **3**

Founded: **1971**
Annual Sales: **\$15-30M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Treatment, sale and distribution of agricultural products.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: **Genetic improvement of spring barley.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: Association canadienne des producteurs de semences; Association professionnelle des meuniers du Québec; Association du commerce des semences du Canada.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSONS: **René Cloutier; Cécile Tétreault.**

SERDARY RESEARCH LABORATORY INC.

HEAD OFFICE

**P.O. Box 5036
1643 Kathryn Drive
London, Ontario N6G 2R7**

RESEARCH FACILITY

Same as Head Office

Telephone: **(519) 434-4419**
Telex: **064-78585**
Fax:

Manufacturing Director:
Mark Olbrychski

Telephone: **(519) 434-4419**

President: **B. Serdarevich, Ph.D.**

R & D Director: **B. Serdarevich, Ph.D.**
Telephone: **(519) 434-4419**

Employees: **3-4**
R & D Employees: **3-4**
(In biotechnology: **2**)

Founded: **1989**
Annual Sales : **\$0-1M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$20K**)

PRINCIPAL ACTIVITIES: Production and development of high technology biochemicals for medical research.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: New biochemicals in the lipid field. Organic synthesis and biosynthesis from animals and vegetables; separation and purification by chromatography. Synthetic development from glycerols.

MANUFACTURING: Biomedical chemicals in lipid field.

SALES/OTHER(S): 15% Canada, 85% Japan, U.S.A.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Mark Olbrychski

OTHER ACTIVITIES:

SHAVER POULTRY BREEDING FARMS LIMITED

HEAD OFFICE

**P.O. Box 400
Cambridge, Ontario N1R 5V9**

RESEARCH FACILITY

Same as Head Office

Telephone: (519) 621-5191
Telex: 039-59337
Fax: (519) 621-9407

President: **T. Schmidt**

R & D Director: **Dr. R.S. Gowe**
Telephone: (519) 621-5191

Employees: **370**
R & D Employees: **25**

Founded: **1957**
Annual Sales : **\$15-30M (Worldwide)**
R & D Expenses: **\$1-3M**

PRINCIPAL ACTIVITIES: Breeding superior meat and egg stock for sale to contract producers.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: (Co-operation with Shaver Research Chair at McGill U.). Relationship of endogenous avian leucosis genes to production traits. Research in the use of transgenic birds using recombinant avian leucosis virus.

MANUFACTURING: None at present, only research.

SALES/OTHER(S): None at present, only research.

OTHER ACTIVITIES:

AFFILIATIONS: Institut sélection animale, France; Animal Research Centre Agriculture Canada, Ottawa; McGill University (Macdonald College); USDA Regional Poultry Research Laboratory, East Lansing.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Co-operative research on the introduction of genes into the germ line of poultry by use of recombinant avian leucosis virus.

COMMENTS: At early stage of research program co-operating with other research agencies preparatory to developing an in-house capacity to work in this area.

CONTACT PERSON: **Dr. R.S. Gowe**

LE GROUPE SNC INC.

HEAD OFFICE

**2, Place Félix Martin
Montréal (Québec) H2Z 1Z3**

RESEARCH FACILITY

Same as Head Office

Telephone: **(514) 866-1000**

Telex: **055-60042**

Fax: **(514) 866-0795**

President: **Jean-Paul Gourdeau**

R & D Director: **Réal L'Archevêque**

Telephone: **(514) 866-1000**

Employees: **4,000**

R & D Employees: **120**

(In biotechnology: **4**)

Founded: **1911**

Annual Sales: **\$30+M**

R & D Expenses: **\$10+M**

(In biotechnology: **\$400K**)

PRINCIPAL ACTIVITIES: Structural engineering, defence products, industrial products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Bioprocesses: fermentation, waste treatment, enzymes.**

MANUFACTURING: **Feed/food; dyes; biopolymers.**

SALES/OTHER(S): **Processes and services.**

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Jacques G. Martel, Ph.D.**

OTHER ACTIVITIES:

B.V. SORBEX INC.

HEAD OFFICE

471, avenue Berkley
St-Lambert, Montréal (Québec)
or: c/o Department of Chemical Engineering
McGill University, 3480, rue University
Montréal (Québec) H3A 2A7

Telephone: (514) 398-4276, (514) 671-7534
Telex:
Fax: (514) 398-3594 (McGill University)
President: Dr. B. Volesky

R & D Director: Dr. N. Kuyucak
Telephone: (514) 398-4920

Employees: 7
R & D Employees: 5
(In biotechnology: 5)

RESEARCH FACILITY

c/o Chemical Engineering
McGill University
3480, rue University
Montréal (Québec) H3A 2A7

Founded: 1987
Annual Sales: No sales so far
R & D Expenses: \$0-0.5M
(In biotechnology: \$0-0.5M)

PRINCIPAL ACTIVITIES: Development of new biosorbent products as a basis for removal and/or recovery of heavy metals from aqueous solutions (wastewaters). Design of biosorption process.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development and formulation of biosorbent materials based on microbial biomass. New biosorbent technology for removal/recovery of heavy metals.

MANUFACTURING: Planned production of biosorbents for heavy metal removal. Utilization of microbial biomass. Process equipment for biosorptive detoxification of wastewaters and/or metal recovery.

SALES/OTHER(S): The biosorbent products are not being marketed as yet. What will be marketed are both product(s) and services (process). Consulting services: detoxification of metal containing wastewaters, metal recovery from dilute solutions.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: For biosorbent material development and testing: a German counterpart has also been brought in. Canadian and U.S.A. partners (and potential clients) are being actively sought for a demonstration plant test operation.

COMMENTS: B.V. Sorbex Inc. is a newly established company to develop and market new biosorbent line of products and technological process based on them for metal removal from wastewaters and recovery of valuable metals.

CONTACT PERSON: Dr. B. Volesky, President, B.V. Sorbex Inc. and Associate Professor, Chemical Engineering, McGill University, 3480, rue University, Montréal (Québec) H3A 2A7, Tél.: (514) 398-4276.

OTHER ACTIVITIES:

SPECIALTY MARINE PRODUCTS LTD.

HEAD OFFICE

**1814 Maritime Mews
Granville Island
Vancouver, British Columbia V6H 3X2**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 685-5499**
Telex:
Fax: **(604) 685-8249**

President: **D.J. Saxby**

R & D Director:
Telephone:

Employees: **5-10**
R & D Employees: **3**
(In biotechnology: **3**)

Founded: **1986**
Annual Sales: **\$0.5-1.5M**
R & D Expenses: **\$0.5M**
(In biotechnology: **\$0.5M**)

PRINCIPAL ACTIVITIES: Aquaculture, fisheries (underutilized species) and extraction of pharmaceuticals and chemicals from the ocean.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Culture oysters. Krill research.
Chemical and pharmaceutical product extraction.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **D. Saxby**

SPECTREX LTÉE / LTD.

HEAD OFFICE

**5250, rue Ferrier, Bureau 508
Montréal (Québec) H4P 1L8**

RESEARCH FACILITY

Telephone: **(514) 738-3377**
Telex: **05-825543**
Fax:

Manufacturing Director:
Daryl D. Salama

Telephone: **(514) 738-3377**

President: **Charles Salama**

R & D Director: **Charles Salama**
Telephone: **(514) 738-3377**

Employees: **16**
R & D Employees: **3**
(In biotechnology: **3**)

Founded: **1968**
Annual Sales: **\$2-4M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$500K**)

PRINCIPAL ACTIVITIES: Manufacture and sale of biotechnological equipment (bioreactors, etc.).

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Bioreactors, biosensors, electronic monitors.

MANUFACTURING: Bioreactors, pH meters.

SALES/OTHER(S): Bioreactors, pH probes, peristaltic pumps, genetic engineering membranes, cell harvesters, freeze dryers.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Distribution of our products in foreign countries.

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

Laboratory equipment for chemical and spectrographic analyses.

S.P.I. SYNTHETIC PEPTIDES INCORPORATED

HEAD OFFICE

(Western region)
Department of Bio-Chemistry
Room 355, Medical Sciences Bldg
University of Alberta
Edmonton, Alberta T6G 2H7

Telephone: **(403) 432-3155**
Telex:
Fax: **(403) 432-7168**

President: **Dr. Robert S. Hodges**

R & D Director: **Dr. J.M.R. Parker**
Telephone: **(403) 432-3155**

Employees: 6
R & D Employees: 2

RESEARCH FACILITY

(Eastern region) Same as Head Office
12285 Yonge Street
P.O. Box 417
Richmond Hill, Ontario
L4C 4Y6

(416) 773-2820
06-986549 NANUG RHIL
(416) 773-2489

Founded: 1986
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: R & D: peptide pharmaceuticals, diagnostics and synthetic vaccines; computer software for biotechnology.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Peptide synthesis, synthetic vaccines.

MANUFACTURING:

SALES/OTHER(S): Computer software for biotechnology.

OTHER ACTIVITIES:

AFFILIATIONS: Alberta Peptide Institute; Richmond Pharmaceuticals Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Funding for R & D projects. Collaboration on joint ventures.**

COMMENTS:

CONTACT PERSONS: Eastern Region: J.G. McElroy, Tel.: (416) 773-2820; Western Region: Dr. R.S. Hodges, Tel.: (403) 432-3155.

STAKE TECHNOLOGY LTD.

HEAD OFFICE

208 Wycroft Road
Oakville, Ontario L6K 3T8

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 842-4560
Telex: 06-982285
Fax:

Manufacturing Director:
Cyril Ing

Telephone: (416) 842-4560

President: Jeremy N. Kendall

R & D Director: John D. Taylor
Telephone: (416) 842-4560

Employees: 21
R & D Employees: 5

Founded: 1973
Annual Sales: \$3-5M
R & D Expenses: \$0.5-1M

PRINCIPAL ACTIVITIES: Biomass conversion technology and equipment.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Chemicals and SCP from forest and agricultural residues.

MANUFACTURING: Continuous high pressure biomass processing equipment.

SALES/OTHER(S): Equipment and process technology.

OTHER ACTIVITIES:

Pulp and paper and wood composites.

Heat recovery equipment.

Turnkey heat recovery systems.

AFFILIATIONS: Stake Technology has subsidiary, Best Energy Systems Inc., which supplies turnkey industrial heat recovery systems.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint development of new applications of technology.

COMMENTS:

CONTACT PERSON: John D. Taylor

ST. LAWRENCE REACTORS LTD.

HEAD OFFICE

**St. Lawrence Reactors Limited
50 Elmwood Avenue South
Mississauga, Ontario L5G 3J7**

Telephone: (416) 271-1100

Telex:

Fax: (416) 271-6929

President: H.A. Krech

R & D Director: Dr. P.G. Assarsson

Telephone: (416) 271-1100

Employees: 13

R & D Employees: 6

RESEARCH FACILITY

Same as Head Office

Manufacturing Director:

D.K. Pearce

Telephone: (416) 271-1100

Founded: 1980

Annual Sales: N/A

R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Engineering in all aspects of starch conversion technology and ethanol fermentation technology. R & D modified starch products; ligno-cellulosics; biomass conversions; food additives; sweeteners.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Biomass conversions. Ligno-cellulosic conversion.

MANUFACTURING: Glucose syrup processing technology and equipment. Ethanol fermentation technology.

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Subsidiary of St. Lawrence Starch Limited; Joint Venture Partner - BIO-HOL Developments.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Interest in co-operative research and development projects. Marketing and licensing of Bio-Hol Technology.

COMMENTS: Carry out joint ventures with Bio-Hol in production of value-added products from ligno-cellulosics.

CONTACT PERSONS: P.D. Campbell, P. Eng.

SYLVAN INDUSTRIES LTD.

HEAD OFFICE

**28355 Fraser Highway
Aldergrove, British Columbia V0X 1A0**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 533-4444**

Telex:

Fax: **(604) 856-8929**

President: **Neil MacDonald**

R & D Director: **Neil MacDonald**

Telephone: **(604) 533-4444**

Employees: **25**

R & D Employees: **3**

(In biotechnology: **2**)

Manufacturing Director:

Greg Harms

Telephone: **(604) 533-4444**

Founded: **1987**

Annual Sales: **\$1-3M**

R & D Expenses: **\$0-0.5M**

(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Specialty mushroom farm.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: New species and cultivation techniques for specialty mushrooms on waste cellulosic materials.

MANUFACTURING: Engaged in large-scale production of pleurotis species of mushrooms.

SALES/OTHER(S): Specialty mushrooms sold to Canada, Japan, U.S.A. and Europe.

AFFILIATIONS: Advanced Biotechnology Ltd.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Joint venture expansion near other urban markets.

COMMENTS: World leader in specialty mushroom technology.

CONTACT PERSONS: Dwight Jefferson, Vice President, Marketing; Neil MacDonald, President.

OTHER ACTIVITIES:

SYNDEL LABORATORIES LTD.

HEAD OFFICE

**8879 Selkirk Street
Vancouver, British Columbia V6P 4J6**

RESEARCH FACILITY

Same as Head Office

Telephone: **(604) 266-7131**
Telex: **04-507726**
Fax: **(604) 266-0156**

Manufacturing Director:
Richard Bradshaw

Telephone: **(604) 266-7131**

President: **J.M. Little**

R & D Director: **Robert Bose, Ph.D.**
Telephone: **(604) 266-7131**

Employees: **12**
R & D Employees: **3**
(In biotechnology: **2**)

Founded: **1977**
Annual Sales: **\$1-3M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$30K**)

PRINCIPAL ACTIVITIES: Manufacturing pharmaceuticals for fish health; human diagnostics; raw materials for genetic engineering.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Deoxyribonucleoside production. Natural product pesticides.

MANUFACTURING: Sex reversal hormones for fish. Hormones for induced breeding for fish.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSONS: J.M. Little; M.K. Harker.

OTHER ACTIVITIES:

Pharmaceuticals from fish by-product. Fish drugs and feed supplements.

Pharmaceuticals. Drugs.

Fish disease diagnostic laboratory. Veterinary services for fish. Consulting: fisheries and aquaculture.

SYNPHAR LABS. INC. AND TAIHO ALBERTA LTD.

HEAD OFFICE

#24-4290-91A Street
Edmonton, Alberta T6E 5V2

RESEARCH FACILITY

Same as Head Office

Telephone: (403) 462-4044

Telex:

Fax: (403) 461-0196

President: Dr. R.G. Micetich

R & D Director: Dr. R.G. Micetich

Telephone: (403) 462-4044

Employees: 40

R & D Employees: 33

Founded: 1987

Annual Sales: N/A

R & D Expenses: N/A

PRINCIPAL ACTIVITIES: Pharmaceutical research and development. Therapeutic use of monoclonal antibodies.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Design, synthesis and testing of potential new drugs with emphasis on infectious diseases.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Taiho Pharmaceutical Company Ltd., Japan.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: This has already been established.

COMMENTS: The company is working in close collaboration with Taiho Pharmaceutical Company Limited of Japan. In addition, SynPhar Laboratories Incorporated already has extremely good contacts with major pharmaceutical companies in the U.S.A., Europe, Japan, South Korea and India.

CONTACT PERSONS: Dr. R.G. Micetich; Mrs. Donna Wenzel; Christopher G. Micetich.

SYNTEX INC.

HEAD OFFICE

**2100 Syntex Court
Mississauga, Ontario L5N 3X4**

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 821-4000
Telex: 0623349
Fax: (416) 821-2902

Manufacturing Director:
Jean Castonguay (Mr.)

Telephone: (416) 821-4000 ext. 282

President: **Melvin Booth**

R & D Director: **Dr. Allen Krantz**
Telephone: (416) 821-4000 ext. 285

Employees:
R & D Employees: 25
(In biotechnology: 18)

Founded: 1963
Annual Sales: \$30+M
R & D Expenses: \$3-5M
(In biotechnology: \$2M)

PRINCIPAL ACTIVITIES: **Pharmaceuticals.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: In enzyme mechanics and enzyme inhibitors for pharmaceuticals for human health care.

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

AFFILIATIONS: Syntex Corporation, 3401 Hillview Avenue, Palo Alto, CA 94304, U.S.A.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Application of high technology to drug design with enzyme targets.

COMMENTS:

CONTACT PERSON: **Ginette Leclair**

TCI-SUPERIOR DIVISION MUELLER CANADA INC.

HEAD OFFICE

**6500 Northwest Drive
Mississauga, Ontario L4V 1K4**

RESEARCH FACILITY

Same as Head Office

Telephone: **(416) 677-9000**
Telex: **06-968814**
Fax: **(416) 677-4988**

Manufacturing Director:
A.D. Malizia

Telephone: **(416) 677-9000**

President: **T. Ashwin**

Director, Product Development: **B.S. Smith**
Telephone: **(416) 677-9000**

Employees: **200**
R & D Employees: **2**

Founded: **1962**
Annual Sales: **\$30+M**
R & D Expenses: **\$0-0.5M**

PRINCIPAL ACTIVITIES: Manufacturing stainless steel process equipment such as bio-reactors and fermenters.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT:

MANUFACTURING: **Manufacturing stainless steel process equipment such as bio-reactors and fermenters.**

Food and dairy fermentation.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Brian S. Smith**

TECHNICAL MARKETING ASSOCIATES LIMITED

HEAD OFFICE

6695 Millcreek Road, Unit 1
Mississauga, Ontario L5N 5M5

RESEARCH FACILITY

301 King Street East
Kitchener, Ontario N2G 2L2

Telephone: (416) 826-7752
Telex: 06-218227
Fax: (416) 826-8225

President: R.H. Daniels

R & D Director: Dr. Dennis Fantin
Telephone: (519) 744-9571

Employees: 90
R & D Employees: 1
(In biotechnology: 2)

Founded: 1985
Annual Sales: \$15-30M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Marketing and sale of scientific instrumentation.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Adaptation of new chemistries for synthesis and sequencing of synthetic DNA/RNA and peptides/proteins.

MANUFACTURING:

SALES/OTHER(S): Marketing and sale of synthesizers, sequencers and extractors for DNA/RNA and peptides proteins.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: We maintain specialists on staff to assist in the design of laboratories where DNA/RNA or peptide/protein synthesis or sequencing facilities will be housed.

CONTACT PERSON: Dr. Dennis Fantin, Tel.: (519) 744-9571.

OTHER ACTIVITIES: Biology/ Biochemistry

Marketing and sale of research grade spectrofluorometer, fluorescence lifetime systems and dual wavelength spectrophotometers for biology/biochemistry.

TEMFIBRE INC.

HEAD OFFICE

C.P. 3000
Temiscamingue (Québec)

RESEARCH FACILITY

Same as Head Office

Telephone: **(819) 627-9505**
 Telex: **067-76281**
 Fax:

Manufacturing Director:
R.A. Benson

Telephone: **(819) 627-9505**

President: **F.A. Dotteri**

R & D Director: **A. Bialski, Ph.D.**
 Telephone: **(819) 627-9505**

Employees: **20**
 R & D Employees: **2**
 (In biotechnology: **0**)

Founded: **1977**
 Annual Sales: **\$3-5M**
 R & D Expenses: **\$0-0.5M**
 (In biotechnology: **\$50K**)

PRINCIPAL ACTIVITIES: **Sale of lignosulfonates.**

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Fermentation of pentose sugars in spent sulfite liquor to produce ethyl alcohol.**

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **We need yeast strains to ferment spent sulfite liquor under difficult conditions.**

COMMENTS:

CONTACT PERSON:

OTHER ACTIVITIES:

Development of new lignosulfonate products.

TERRA NOVA FISHERY CO. LTD.

HEAD OFFICE

**38 Bay Bulls Road
St. John's, Newfoundland A1G 1A5**

Telephone: (709) 364-7371
Telex: 018-3173
Fax: (709) 364-8759

President: **Dr. Cosmas Ho**

R & D Director: **Dr. Michael Voigt**
Telephone: (709) 737-8553

Employees: **30+**
R & D Employees: **4**
(In biotechnology: **4**)

RESEARCH FACILITY

**Plant-Clareville, Newfoundland
AOE 1J0 and
Memorial University of
Newfoundland
St. John's, Newfoundland**

Manufacturing Director:
David Ho

Telephone: (709) 466-7186

Founded: **1979**
Annual Sales: **\$5-7M**
R & D Expenses: **\$0-0.5M**
(In biotechnology: **\$0-0.5M**)

PRINCIPAL ACTIVITIES: Development of processes to recover and utilize by-products from fillets and frames of various fish.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of biochemical, physical and sensory data bases associated with the utilization of fish muscle and other marine by-products. Determination of the effects of various environmental and processing factors on the properties of muscle proteins and on the interactions of functional ingredients.

MANUFACTURING: Development of novel products and the development of unique thermal extrusion equipment.

SALES/OTHER(S): The products being developed are being engineered to meet the current requirements for marketing.

OTHER ACTIVITIES:

AFFILIATIONS: Memorial University of Newfoundland.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Dr. Cosmas Ho**

THERMO TECH WASTE SYSTEMS INC.

HEAD OFFICE

#203 - 1120 Austin Avenue
Coquitlam, British Columbia V3K 3P5

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 937-3022

Telex:

Fax: (604) 937-5274

Manufacturing Director:

René Braconnier

President: **René Braconnier**

R & D Director: **Dr. Hugh Saben**

Telephone:

Founded: **1987**

Employees: **15**

Annual Sales: **\$1-3 M**

R & D Employees: **10**

R & D Expenses: **\$0.5-1M**

(In biotechnology: **10**)

(In biotechnology: **\$0.5-1M**)

PRINCIPAL ACTIVITIES: **Thermophilic processing or biodegradable materials.**

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: High temperature (80-90°C)
thermophilic process (self-heat) no heat added.

MANUFACTURING: Digesters and turnkey thermophilic plant,
mobile units.

SALES/OTHER(S): Distributorships.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: All types of government assistance, all
Ministries of the Environment.

COMMENTS: We provide an economical solution for pollution for any type of biodegradable
waste.

CONTACT PERSON:

W.G. THOMPSON & SONS LTD.

HEAD OFFICE

**Box 250
Blenheim, Ontario N0P 1A0**

RESEARCH FACILITY

Same as Head Office

Telephone: (519) 676-5411
Telex: 064-78529
Fax: (519) 676-3185

President: **W.D. Thompson**

R & D Director: **D.A. Littlejohns**
Telephone: (519) 676-5411

Employees: **200+**
R & D Employees: **13**
(In biotechnology: **4**)

Founded: **1926**
Annual Sales: **\$30+M**
R & D Expenses: **\$0.5-1M**

PRINCIPAL ACTIVITIES: Agriculture: seed chemicals, fertilizer, grain handling and specialty crops including dry beans.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Variety development of double haploid - barley via genetic engineering of wild strain.

MANUFACTURING: Agricultural products.

SALES/OTHER(S): Agricultural products.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: **Privately-owned Canadian company.**

COMMENTS:

CONTACT PERSON: **D.A. Littlejohns**

OTHER ACTIVITIES:

LES SERVICES T.M.G. INC. (Niobec Mine)

HEAD OFFICE

C.P. 70
St-Honoré (Québec) G0V 1L0

RESEARCH FACILITY

Same as Head Office

Telephone: (418) 673-4894
Telex: 061-36226
Fax: (418) 673-3157

Mine Manager: Michel Rodrigue

R & D Director: Rudy Bliss
Telephone: (418) 673-4694

Employees: 160
R & D Employees: 5
(In biotechnology: 1.5)

Founded: 1976
Annual Sales: \$15-30M
R & D Expenses: \$0-0.5M
(In biotechnology: \$50K)

Manufacturing Director:
Noel Ayotte

Telephone: (418) 673-4694

PRINCIPAL ACTIVITIES: Mining and processing of niobium containing ore. Production of pyrochlore (niobium oxide) concentrate.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Use of bacteria to remove residual reagents from the tailing pond-reclaimed water which is used in the mill.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Would like to know what is known in this area on national and international scene.

COMMENTS:

CONTACT PERSON: R. Bliss, Tel.: (418) 673-4694.

TYLER RESEARCH INSTRUMENTS CORPORATION

HEAD OFFICE

#6128-103rd Street
Edmonton, Alberta T6H 2H8

RESEARCH FACILITY

Telephone: (403) 435-7041
Telex:
Fax: (403) 436-3783

Manufacturing Director:
J.R. Bennett, P.Eng.

Telephone: (403) 435-7041

President: Dr. J.M. Tyler, Ph.D.

R & D Director: Dr. J.M. Tyler, Ph.D.
Telephone:

Employees: 4
R & D Employees: 1
(In biotechnology: 2)

Founded: 1987
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M
(In biotechnology: \$170K)

PRINCIPAL ACTIVITIES: Design and manufacture of molecular separations equipment and associated instruments.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT:

MANUFACTURING: Vertical, horizontal, and mega base electrophoretic systems, electrophoretic transfer systems, electrophoretic elution systems, gel processing tools, gradient forming and fractioning equipment, dialysis and microdialysis systems, ultrafiltration cells, concentrators, microtiter transfer systems, hybridization manifolds for DNA: DNA & DNA: RNA analysis, and radiation shielding designed specially for biochemical and molecular biological applications.

In addition, any of our standard items can be modified to suit special applications as required, and we design instruments to meet stated requirements.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Distribution in the international marketplace.

COMMENTS:

CONTACT PERSON: J.R. (Jack) Bennett, P.Eng.

UNITED GRAIN GROWERS

HEAD OFFICE

**Box 6600
Winnipeg, Manitoba R3C 3A7**

RESEARCH FACILITY

Same as Head Office

Telephone: (204) 944-5554
Telex:
Fax:

Manager Research Station:
**A. Gallagher
P.O. Box 179
Miami, Manitoba R0G 1H0**

Executive Vice-President and C.E.O.: **Gerry W. Moore**

Telephone: (204) 435-2063

R & D Director: **G.W. Moore**
Telephone: (204) 944-5554

Employees: **86**
R & D Employees: **75**
(In biotechnology: **75**)

Founded: **1985**
Annual Sales: **N/A**
R & D Expenses: **\$1-3M**
(In biotechnology: **\$1-3M**)

PRINCIPAL ACTIVITIES: Development of hybrid spring canolas.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Allelix provides the biotech skills. We provide the commercial expertise.

MANUFACTURING:

SALES/OTHER(S): We will develop the processing and sales delivery system.

AFFILIATIONS: Allelix Inc.: for the development of hybrid spring canolas.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS: Allelix forms the base of the technical research group. We provide expertise in field operations.

CONTACT PERSON: G.W. Moore, Executive Vice-President and C.O.O., United Grain Growers.

OTHER ACTIVITIES:

VANCOUVER ISLAND ANTIBODIES LTD.

HEAD OFFICE

285 Caldecote Road
Victoria, British Columbia V8X 3X3

RESEARCH FACILITY

Same as Head Office

Telephone: (604) 479-8671

Telex:

Fax:

Manufacturing Director:

Dr. T.W. Pearson

Telephone: (604) 479-8671

President: Dr. T.W. Pearson

R & D Director: Dr. T.W. Pearson

Telephone: (604) 479-8671

Employees: 2

R & D Employees: 2

(In biotechnology: 2)

Founded:

1981

Annual Sales:

\$0-1M

R & D Expenses:

\$0-0.5M

(In biotechnology: \$20K)

PRINCIPAL ACTIVITIES: Production of antisera and monoclonal antibodies. Development of immunodiagnostic reagents. Antigen purification.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Production of antisera and monoclonal antibodies. Development of immunodiagnostic reagents. Antigen purification.

MANUFACTURING: Purification of antibodies (in small quantities). Antigen purification.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Marketing and distribution firms. International health agencies. Will do contract production of antibodies.

COMMENTS:

CONTACT PERSON: Dr. T.W. Pearson, President.

VETERINARY INFECTIOUS DISEASE ORGANIZATION

HEAD OFFICE

124 Veterinary Road
Saskatoon, Saskatchewan S7N 0W0

RESEARCH FACILITY

Same as Head Office

Telephone: (306) 966-7465

Telex:

Fax: (306) 966-7478

Director: Dr. S.D. Acres

R & D Director: Dr. Lorne A. Babiuk

Telephone: (306) 966-7465

Employees: 38

R & D Employees: 31

(In biotechnology: 12)

Founded: 1975

Annual Sales:

R & D Expenses: \$3-5M

(In biotechnology: \$2M)

PRINCIPAL ACTIVITIES: Development of animal health care products, vaccines, diagnostics.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Development of recombinant and synthetic peptide vaccines, product testing, immunomodulators, lymphokines.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS: Biostar Inc.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Product testing, joint ventures, contracts.

COMMENTS:

CONTACT PERSONS: Dr. Steve D. Acres or Dr. Lorne A. Babiuk.

OTHER ACTIVITIES:

Gnotobiotic animal facilities.

VETREPHARM INC.

HEAD OFFICE

**69 Bessemer Road, Unit 27
London, Ontario N6E 2V8**

Telephone: (519) 685-5800
Telex: 064-5817
Fax: (519) 685-5825

President: Graeme McRae
R & D Director: Dr. Stan Alkemade
Telephone: (519) 685-5800

Employees: 40
R & D Employees: 9
(In biotechnology: 9)

RESEARCH FACILITY

**Vetrepharm Research Inc.
P.O. Box 19
RR# 1
Putnam, Ontario N0L 2B0**

Manufacturing Director:
Riek Culbert

Telephone: (519) 485-4731

Founded: 1980
Annual Sales: \$3-5M
R & D Expenses: \$0.5-1M
(In biotechnology: \$1.5M)

PRINCIPAL ACTIVITIES: Production and distribution of veterinary pharmaceuticals, biologics, polyclonal antibodies, immunotherapeutics, immune response activators and highly purified reproductive hormones.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT:

1. Follicitropin for human I.V.F. and
2. Polyclonal antibodies for disease treatment.
3. Immune system modulators for animals and humans.
4. Extraction of ultrapurified hormones from animal tissues.

MANUFACTURING:

1. Purified follicitropin (FSH).
2. Animal and poultry vaccines.
3. Immunotherapeutics and immunostimulants.
4. Immune response activators as vaccine adjuvants.

N.B.: #) Represents order of activities.

SALES/OTHER(S):

OTHER ACTIVITIES:

1. Pharmaceutical products for human and veterinary applications.
 2. Insecticides.
 3. Rodenticides.
-
1. Pharmaceuticals.
 2. Insecticides.
 3. Feed additives and supplements.

AFFILIATIONS: Subsidiary companies: Vetrepharm Research (USA) Inc., Athens, GA. Bioniche Inc., London, Ontario.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Licensing or contract research and development of health care products. International distributors for Vetrepharm products and technologies.

COMMENTS: Vetrepharm strongly believes in the manipulation of biological systems and immune responses to prevent, control or treat disease conditions.

CONTACT PERSON: Dr. Stan Alkemade

WAITAKI INTERNATIONAL BIOSCIENCES

HEAD OFFICE

**55 Glen Searlett Road
Toronto, Ontario M6N 1P5**

RESEARCH FACILITY

Same as Head Office

Telephone: (416) 761-4089
Telex: 08-22874WIBIO
Fax: (416) 761-4455

President: Elliott D. Young (General Manager)

R & D Director: W.J. Dobson/B.T. Khouw :
Telephone: (416) 761-4089

Employees:	40	Founded:	1987
R & D Employees:	7	Annual Sales:	N/A
(In biotechnology:	7)	R & D Expenses:	N/A

PRINCIPAL ACTIVITIES: Extraction and purification of biochemicals from animal by-products.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Growth factors and other defined or non-serum media components for mammalian cell culture.

MANUFACTURING: Growth factors, enzymes and other serum-free media components.

SALES/OTHER(S): Major markets served include: cell culture, serological, vaccine and diagnostic markets. United States, UK, Europe and Far East.

OTHER ACTIVITIES:

Biofactors for cosmetic market.

Anticoagulant heparin, Enteric coating compound.

Pharmaceutical and cosmetic.

AFFILIATIONS: Waitaki International Biosciences, Christchurch, New Zealand.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Open to discussion.

COMMENTS:

CONTACT PERSONS: Elliott D. Young; General Manager; Roy Val; Sales and Marketing Manager.

WARDROP ENGINEERING INC.

HEAD OFFICE

77 Main Street
Winnipeg, Manitoba R3C 3H1

RESEARCH FACILITY

Same as Head Office

Telephone: (204) 956-0980
Telex: 07-57487
Fax: (204) 957-5389

President: D.R. Grimes, P.Eng.

R & D Director: Dr. H. Husain, P. Eng.
Telephone: (204) 956-0980

Employees: 200
R & D Employees: 8
(In biotechnology: 1)

Founded: 1955
Annual Sales: N/A
R & D Expenses: \$0-0.5M
(In biotechnology: \$20K)

PRINCIPAL ACTIVITIES: Engineering services for process and biochemical industries, including food, ethanol, pulp and paper, mineral, space and aerospace.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Downstream processing, especially membrane technology and dehydration. Fermentation including immobilized bioreactors, yeast generation, ethanol production.

MANUFACTURING:

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Technology marketing.

COMMENTS:

CONTACT PERSON: Dr. Hadi Husain, P.Eng.

OTHER ACTIVITIES:

WESTECH AGRICULTURE LTD.

HEAD OFFICE

**West Prince Industry Centre
R.R. #1, Alberton
Prince Edward Island C0B 1B0**

RESEARCH FACILITY

Same as Head Office

Telephone: (902) 853-3636
Telex:
Fax:

Manufacturing Director:
Nora Gaudette

Telephone: (902) 853-3636

President: **Richard Ozon**

R & D Director: **Richard Ozon**
Telephone: (902) 853-2181

Employees: 7
R & D Employees: 2

Founded: 1983
Annual Sales: \$0-1M
R & D Expenses: \$0-0.5M

PRINCIPAL ACTIVITIES: Strawberry tissue culture. Anther culture and haploid techniques of wheat and barley. Lowland blueberry propagation.

BIOTECHNOLOGY ACTIVITIES:

OTHER ACTIVITIES:

RESEARCH & DEVELOPMENT: Variety improvement of wheat and barley.

MANUFACTURING: Strawberry nursery.

SALES/OTHER(S): Strawberry plants.

AFFILIATIONS: Agriculture Canada, Charlottetown, P.E.I.

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: Nora Gaudette

WESTERN BIOLOGICALS LTD.

HEAD OFFICE

**P.O. Box 46486, Station "Q"
Vancouver, British Columbia V6R 4G7**

Telephone: (604) 226-0986

Telex:

Fax:

President: William Chalmers

R & D Director: William Chalmers

Telephone:

Employees: 4

R & D Employees: 2

(In biotechnology: 2)

RESEARCH FACILITY

**3852 West, 21th Avenue
Vancouver, British Columbia
V6S 1H4**

Founded: 1981

Annual Sales: \$0-1M

R & D Expenses: \$0-0.5M

(In biotechnology: \$500K)

PRINCIPAL ACTIVITIES: Plant tissue culture; mushroom spawn and strain development; pest control.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Mushroom spawn and strain development. Plant tissue culture.

MANUFACTURING: Mushroom spawn. Pheromones.

SALES/OTHER(S): Mushroom spawn, cultures, culture/cultivation equipment/materials. Plant tissue culture supplies.

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: William Chalmers

OTHER ACTIVITIES:

W.H.E. BIO-SYSTEMS

(A Division of W.H.E. Process Systems Limited)

HEAD OFFICE 100 Klondike Drive Weston, Ontario M9L 1X3 Telephone: (416) 744-4155 Telex: 06-988391 Fax: (416) 744-4171 President: David J. Eccleston R & D Director: Dan Lynch Telephone: (416) 744-4155 Employees: 30 R & D Employees: 6 (In biotechnology: 6)	RESEARCH FACILITY Same as Head Office Founded: 1979 Annual Sales: \$10-15M R & D Expenses: \$0-0.5M (In biotechnology: \$0-0.5M)
PRINCIPAL ACTIVITIES: Manufacture of fermentation equipment and computer controls for fermentation along with associated stainless steel process piping, valves and equipment.	
BIOTECHNOLOGY ACTIVITIES: <u>RESEARCH & DEVELOPMENT:</u> Fermenter and control design. Expert system software development. <u>MANUFACTURING:</u> Fermenters, controls, dosing systems. Ultrafiltration, microfiltration. <u>SALES/OTHER(S):</u> Fermenters, controls, dosing systems. Ultrafiltration, microfiltration, instrumentation, sensors and probes. <u>AFFILIATIONS:</u> <u>FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:</u> <u>COMMENTS:</u> <u>CONTACT PERSONS:</u> Paul Hallman, Vice-President, Sales; Dan Lynch, Division Manager.	OTHER ACTIVITIES: Process equipment for food, dairy and pharmaceutical industries. Valves, pumps, fittings, tanks, heat exchanger, control systems; field installation. Design, supply and installation of process systems for the dairy; food and pharmaceutical industries.

THE WINNIPEG Rh INSTITUTE INC.

HEAD OFFICE

**University of Manitoba
Winnipeg, Manitoba R3T 2N2**

RESEARCH FACILITY

Telephone: (204) 269-7291
Telex: 07587870
Fax: (204) 269-7003

Manufacturing Directors:
**Gerry Bazin;
Jeannette Rosolowich.**

President: **Albert D. Friesen, Ph.D.**

R & D Director:
Telephone:

Employees: 60
R & D Employees: 8
(In biotechnology: 3)

Founded: 1969
Annual Sales: \$-1-3M
R & D Expenses: \$0-0.5M
(In biotechnology: \$100K)

PRINCIPAL ACTIVITIES: Manufacture of plasma products: albumin, factor VIII, factor IX, intravenous immune globulin, Rh immune globulin.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: **Superoxide dismutase.**

MANUFACTURING: **Blood proteins. Industrial scale protein purification.**

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED:

COMMENTS:

CONTACT PERSON: **Albert D. Friesen, Ph.D.**

OTHER ACTIVITIES:

XYMOTECH BIOSYSTEMS/BIOSYSTÈMES INC.

HEAD OFFICE

5250, rue Ferrier, Suite 508
Montréal (Québec) H4P 1L6

RESEARCH FACILITY

Same as Head Office

Telephone: (514) 738-3377
Telex: 05-825543
Fax:

President: Charles Salama

R & D Director: Charles Carol
Telephone: (514) 738-3377

Employees: 7
R & D Employees: 5
(In biotechnology: 5)

Founded: 1988
Annual Sales: N/A
R & D Expenses: \$0-0.5M
(In biotechnology: \$500K)

PRINCIPAL ACTIVITIES: Manufacture and sale of fermenters, pH controllers and peristaltic pumps. Biosensors.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Fermenters bench top. Fermenters mammalian cells. Biosensors.

MANUFACTURING: BIOCELL-2000 benchtop two litre fermenters. SENTRY-2000 pH monitor and control systems. BIOPUMP - 2000, peristaltic pumps.

SALES/OTHER(S): BIOCELL-2000 benchtop two litre fermenters. SENTRY-2000 pH monitor and control systems. BIOPUMP - 2000, peristaltic pumps.

OTHER ACTIVITIES:

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Seeks overseas distributors in U.S.A., Asia and Europe.

COMMENTS: BIOCELL-2000 fermenters incorporate unique features useful in research and development, teaching and industrial applications.

CONTACT PERSON: Charles Salama

ZETON INC.

HEAD OFFICE

4129 Harvester Road
Burlington, Ontario L7L 5M3

RESEARCH FACILITY

Telephone: (416) 632-3123
Telex: 061-8678
Fax: (416) 632-0301

President: G.S. Watt

R & D Director:
Telephone:

Employees: 12
R & D Employees: 0

Founded: 1986
Annual Sales: \$1-3M
R & D Expenses: 0

PRINCIPAL ACTIVITIES: Design and manufacture of custom process development units, pilot, demonstration and small-scale production plants.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT:

MANUFACTURING: Custom design and manufacture of pilot plants, demonstration plants and small-scale production plants for biotechnology research in downstream processing and scale-up.

SALES/OTHER(S):

AFFILIATIONS:

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Manufacture of systems under licence.

COMMENTS:

CONTACT PERSON: David Beckman

OTHER ACTIVITIES:

Design and manufacture of process development units and pilot plants for: Supercritical extraction; Adsorption/desorption; Polymerization; Synthetic fuels; Petroleum processing; Electronic chemicals.

The following response was not submitted in time to be included in the analysis.

MONSANTO CANADA INC.

HEAD OFFICE

2330 Argentia Road
P.O. Box 787, Streetsville Post Office
Mississauga, Ontario L5M 2G4

Telephone: (416) 826-9222
Telex: 06-219651
Fax: (416) 826-3119/6416

President: Dr. H.A. Aboutboul

R & D Co-Ordinator: Dr. J.R. Wearing
Telephone: (416) 826-9222

Employees: 0 - 1 thousand
R & D Employees: N/A

RESEARCH FACILITY

Same as Head Office

Manufacturing Manager:
G.L. LaPlante

Telephone: (514) 366-4850

PRINCIPAL ACTIVITIES: Marketing and manufacturing of agricultural and industrial chemicals and plastic resins.

BIOTECHNOLOGY ACTIVITIES:

RESEARCH & DEVELOPMENT: Animal and Plant Sciences

MANUFACTURING:

SALES/OTHER(S):

OTHER ACTIVITIES:

Affiliate conducting pharmaceutical clinical trials.

AFFILIATIONS: The NutraSweet Company (Mississauga)
G.D. Searle & Co. of Canada Limited (Oakville)
Fisher Controls Company of Canada Limited (Woodstock)

FORM OF CANADIAN/INTERNATIONAL COOPERATION DESIRED: Complementary expertise to assist with Canadian and worldwide research and development.

COMMENTS:

CONTACT PERSON: Dr. J.R. (Jack) Wearing
Manager, Business Development
Monsanto